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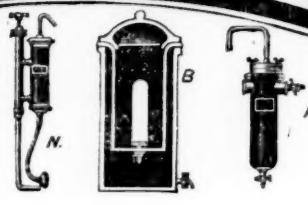

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PART II.[1]

TREATMENT OF WOUNDS OF THE INDIVIDUAL JOINTS.

Shoulder joint.

WOUNDS of this joint are complicated by injury to the lung so frequently that a special examination should be made of the chest; this should never be omitted when there is only an entrance wound.

Early cases are treated merely on the lines already laid down, but when complicated by lung injury some hours should elapse before operation to allow of time for compensation of the heart and lungs to meet the new conditions. After excision of the wound every attempt should be made to close the joint cavity, but in most cases this is anything but easy. Should the head of the bone be severely fractured it is excised, by preference, through the original wound. If the fracture is not severe a partial excision is all that is required. In any case, every effort should be made completely to close the wound—nearly all cases so treated do very well indeed.

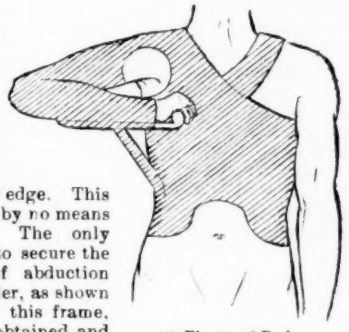
Late cases should be interfered with as little as possible unless a septic arthritis arises; quite a number of these settle down if the limb is efficiently immobilised and extended. In some, however, the infection breaks outside the joint and forms an extra-articular abscess—usually under the deltoid. Such an abscess may be drained behind at the posterior margin of the deltoid, either above or below the line of the circumflex vessels and nerve, according as the treatment necessitates the patient lying down or sitting up. These abscesses, if neglected, may track downwards on to the back under cover of the latissimus dorsi, less commonly forwards under the pectoral muscles, sometimes downwards in the arm, following the line of the brachial vessels and nerves or the musculo-spiral nerve.

Should the head of the bone be at all severely damaged and infection arise, excision is the only course left open. It is best carried out after enlarging the entry or exit, if either of these be of any size; otherwise the anterior route along the pectoro deltoid groove offers the best advantages, combined with posterior drainage. When excising the joint care should be taken to remove as little bone as possible beyond the anatomical head on the inner side and to leave intact the long head of the biceps. Should it be necessary to interfere with the tuberosities, all available bone should be attached to the tendon insertions and not stripped off them even subperiosteally—otherwise a flail joint is liable to result.

Position of the joint during treatment.—After a wound the joint should always be carefully immobilised and as far as possible extended. In early cases a simple and more or less satisfactory method is to make the patient into a "sitting-case" and sling the arm by a narrow fold round the wrist; the weight of the arm alone secures a certain amount of extension. Fixation is secured by strapping the arm firmly to the chest and finally applying a tight bandage over all. At subsequent dressings the strapping is, of course, left untouched.

In later cases, and many early ones, too, better results are obtained by securing the arm in extension with a Thomas's arm splint at right angles to the side—but generally the ring of the splint is in the way of the wound. This disadvantage may be overcome as follows: the patient is treated lying on the back; the arm is secured by weight extension at right angles to the body and slung meanwhile from a Balkan frame lying crossways of the bed. In such a case dressings would only be infrequently changed (once every three to seven days), and then by sliding the bed to one side from under the patient, so that the back of the shoulder lies exposed over the edge. This method, however, is by no means really satisfactory. The only efficient method is to secure the patient in a sort of abduction frame for the shoulder, as shown in Figs. 2–4. Using this frame, good results can be obtained and dressings readily changed without any disturbance to the joint and consequent reactionary rise in temperature. Later on, when the patient is in a fit condition to get up, the frame is replaced by a suitable plaster jacket and support securing the arm in abduction. (Fig. 5.)

FIG. 5.



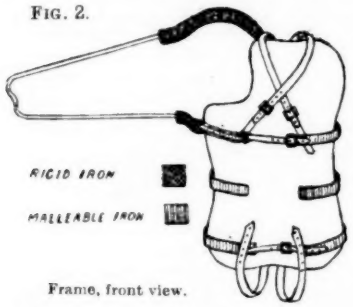
Plaster-of-Paris.

When extension is applied to the limb one of the great things to be guarded against is a stiff elbow; to avoid this the extension should be applied above the elbow and the joint bent up once every day.

The position for ankylosis varies according to the needs of the patient in after-life. If a freely movable arm is required ankylosis should be secured in abduction at an angle of about 80°, with slight external rotation and slight flexion. On the other hand, if a limb is required possessing more stability than mobility ankylosis should be secured in abduction at an angle of 40° to 45°. Every gradation between these two may be obtained. When ankylosis is secured in the abducted position the arm always readily falls in to the side, merely by the action of gravity and rotation of the scapula on the chest wall. Abduction of the arm from the side later on is secured in the same way by rotation of the scapula from contraction of the serratus magnus muscle.

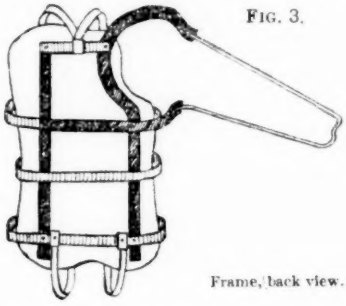
The practice, so often carried out, of treating cases liable to be followed by ankylosis with the elbow close in to the side cannot be too strongly condemned; an arm ankylosed in this position possesses no range of movement and requires subsequently a cuneiform osteotomy below the seat of ankylosis to secure abduction.

FIG. 2.



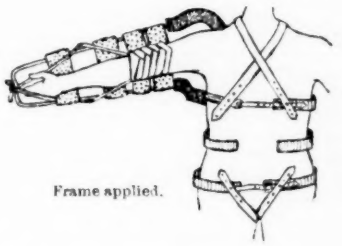
Frame, front view.

FIG. 3.



Frame, back view.

FIG. 4.



Frame applied.

Elbow-joint.

This joint is of special interest from the fact that it is comparatively uncommon to have to interfere with it drastically in cases of infection.

[1] Part I. was published in THE LANCET of Oct. 12th, 1918, p. 477.

Rest and fixation are best secured in all cases by fixed extension with the arm supinated in a straight Thomas's arm-splint. But this position must not be maintained for long, as a stiff elbow is so liable to result. An elbow that becomes stiff in extension is most difficult to get into a flexed position. It should be flexed as soon as possible.

Early cases treated efficiently, as previously described (under general treatment) yield most satisfactory results, in spite of the inability to close and isolate the joint cavity in the greater number of cases. This is particularly so after partial excision. Total excision is but rarely required—only for cases of comminution of the ends of all three bones forming the joint. The olecranon process, if anything like intact, is best left untouched; a better functional result is then obtained and the insertion of the triceps least interfered with. It is essential in all these cases to bend the elbow into a position of acute flexion by the twelfth or fourteenth day at latest, even if the wound is not yet healed. Once having secured the arm in this position a small amount of passive movement [*] is used every one or two days till healing is complete, and then the limb is allowed slowly to extend by slackening the sling daily. In some cases it will be noticed whilst this treatment is going on that the original degree of flexion cannot be obtained: it is accompanied by local heat and tenderness and sometimes fullness. This is an indication that too much movement is being allowed and that the limb must be kept at rest for a further time in the position of greatest flexion. Movement is recommenced only after all signs of local inflammation have disappeared.

Late cases, when septic, usually readily settle down with rest and fixation alone, granted that any retained foreign body and loose bone are removed. Sometimes drainage by lateral incisions may be required.

In a small number of cases the constitutional disturbances from toxic absorption are severe; under these circumstances, to allow of freer drainage and relief of tension, a partial subperiosteal excision of the joint should be used. Only the minimal amount of bone should be removed compatible with efficient drainage. It will depend on the injury as to which bone should be removed—naturally preference must be given in most cases to that already damaged; accordingly it would be part of the articular end of the humerus alone, or of the olecranon alone. Should the entire articular surface of the ulna require removal it is advisable to remove the articular part of the radius as well; by this means the risk of ankylosis between the two bones and consequent loss of pronation and supination in the forearm may be avoided.

As soon as the acutely septic stage has subsided, it is essential for the elbow to be slung in acute flexion and the position changed slightly every couple of days to try to avoid ankylosis.

Wrist-joint.

This articulation possesses five separate synovial cavities: (1) inferior radio-ulnar; (2) radio-carpal; (3) the main carpal and carpo-metacarpal; (4) carpo-metacarpal of the thumb, surrounded by a special capsule of its own; (5) cuneiform-pisiform. Sepsis may be limited to one of these only. When this is the case every effort must be made to keep it localised. Infection of one part of the main synovial cavity is liable to spread over its entire extent. The wrist is *closely* surrounded by important tendons enclosed in extensive synovial sheaths. Every care must be taken during operation to avoid any opening of intact sheaths, from their liability to become infected, with consequent sloughing of the contained tendon.

Early cases.—After excision of fleshy parts of the wound, any fractured carpal bones may be excised with gouge and mallet, preferably subperiosteally. The wound is then treated with B.I.P.P. and carefully packed with paraffinised gauze.

Late cases.—Here similar treatment yields the best results, and it is preferable to leave the case undressed for several days at a time to secure good rest and fixation. If the infection is severe and not localised to the site of injury, all the carpus should be removed subperiosteally as far as possible, save the trapezium—this must, if possible, be left intact to allow of movement of the thumb, especially as this carpo-metacarpal joint is separated by a special capsule from the main synovial cavity.

[*] Once only, not repeated to-and-fro movements; otherwise reaction may be obtained.

Rest and fixation.—The best method of mounting in all cases is in a Thomas's arm-splint, the extension bands being attached to dorsal and palmar aspects of the hand. Should this be impossible a Jones's "cock-up" splint, suitably applied to allow of the dressings being made, should be used.

When a Thomas's arm-splint is used it is important, as soon as the sepsis has settled down, to replace it by a "cock-up" splint. Dorsiflexion is most important, as then the grip of the flexor muscles of the hand is excellent. If ankylosis is secured with the wrist straight there is practically no power in the hand.

Hip-joint.

Gunshot wounds involving the hip-joint are amongst those with the highest mortality met with in the war. This terrible fatality is the result of a series of factors: 1. Shock and blood loss are usually marked. 2. It is usually associated with a fracture of either the femur or the pelvis, or both, each of these in itself being a grave matter. 3. There is often severe damage to the gluteal muscles, and these are particularly prone to gas gangrene. 4. The joint is so near the centre of the circulation that septic absorption is rapid and considerable. 5. The head of the femur is so closely gripped by the circumferential ligament, and the capsule so dense and inextensible, that with the onset of septic arthritis tension very rapidly becomes high and toxic absorption correspondingly great. 6. The joint is so deeply placed that the onset of arthritis is not readily indicated by physical signs. 7. Prolonged convalescence, with its exhausting effect on the patient, is required to ensure recovery. 8. Should amputation be required, disarticulation at the hip-joint is associated with a heavy mortality.

Early cases.—Shock and blood loss are such marked features that at first they entirely dominate the case. They must first be recovered from before the serious surgical measures required are resorted to. Resuscitation as usually carried out means at least a delay of several hours. To my mind, it is this delay that is the chief ultimate factor concerned in the high mortality—it allows of the establishment of a virulent sepsis that passes beyond the immediate limits of the wound.

Resuscitation, to be of real value, must be rapid and efficient. The patient must be quickly warmed up and large quantities of fluid (even as much as 4–5 pints) injected intravenously, combined, if need be, with blood transfusion. This should be immediately followed up by operation. An anæsthetic gas-oxygen is essential to success. Only in this way can even moderately satisfactory results be obtained.

The case is then treated on the same lines as any other early one. If the neck of the femur be fractured to such an extent as to imperil its blood-supply, it is absolutely essential to excise the head of the bone and all loose fragments. Treated in this way at an early stage, quite a number of cases do progress satisfactorily. A number of cases I have treated have done well after having a foreign body removed from the interior of the joint and the bone. I have always found it impossible to suture the capsule.

Should the wound be already septic the widest excision must be practised and the head of the bone removed at once, if the patient will in any way tolerate such a severe procedure. Otherwise a free arthrotomy, including the removal of several V-shaped pieces from the circumferential ligament to allow of drainage, must be used as a temporary measure, and the head of the bone removed a couple of days later.

Late cases.—Amongst a series of cases that reached the base without operation or, having had an operation, without the head of the femur having been removed the mortality was something like 70 per cent. from sepsis, and this in spite of the utmost care in operation and after-treatment. Once the joint is septic to any degree, it is essential to remove the head of the bone. A small number of the slighter cases of septic arthritis do settle down completely if well immobilised and extended.

The onset of arthritis may be diagnosed, when the neck of the bone is intact, by limitation of movement in every direction. Should there be, however, a fracture of the neck the arthritis has to be diagnosed by the general symptoms and by fullness in Scarpa's triangle, accompanied by acute pain and tenderness on pressure over the head of the bone.

Excision of the head of the femur.—In *early cases* the best route, as a rule, is through the original wound, which may have to be enlarged. Sometimes, however, one or other of the *classical* routes must be used. In *later cases* the latter should always be preferred. The most suitable of these are (1) the antero-external, (2) the posterior trans-gluteal. The latter is not a good route, as a rule; it exposes too large a freshly-cut surface to infection.

In septic cases a route possessing many advantages, especially as regards after-treatment, is that which passes on the inner side of the sartorius, the straight head of the rectus femoris being drawn outwards and even partially divided. This allows of good access straight on to the capsule of the joint at the point where it is closest to the surface. If reasonable care be used there is no danger of damaging the femoral artery, but the ascending branch of the external circumflex artery usually requires to be ligated. Posterior drainage is usually not required if the case be treated with Carrel or B.I.P.P. Should it be required, however, it may be obtained by a partial transverse division of the outer part of the gluteus maximus muscle.

In connexion with the use of the Carrel-Dakin method in these cases whilst the patient is on an abduction frame, it is advisable to add a word of caution. If the liquid passes between the patient's back and the splint the most appalling pressure sores may result with amazing rapidity. For this reason I prefer to use it as seldom as possible.

Splinting.—There is only one satisfactory splint for these cases—Jones's abduction frame. Properly applied, after the head of the bone has been removed, it obviates shortening and allows the patient later to walk on an even keel. But the patient is particularly prone to pressure sores on the back unless the skin is carefully attended to. The only way of doing this is to keep the skin hard and perfectly dry. For this purpose a bandage impregnated with French chalk from a dredger is passed from side to side between the patient and the splint, from the shoulder right down to the thighs. This must be regularly done several times in the 24 hours.

Unfortunately, these cases, before reaching a general hospital, have already got an area of cyanotic and atrophic skin over the sacrum from lying for long periods on stretchers, &c., without being able to move owing to their helpless condition and without having had the skin attended to. It is essential, then, to pay particular attention to the skin over the back from the earliest possible moment. The insertion of pads of wool between the patient and the splint must be strictly forbidden; they are the best means of causing further sores. Should a sore develop, the best treatment is to nurse the patient for a time on his face, with a long Liston splint applied to the normal side and weight-extension to the injured limb in partial abduction.

Amputation at the hip-joint is attended by a frightful mortality in these cases. Should it be deemed necessary, the advantages of using an abdominal tourniquet far outweigh any possible disadvantages. There is practically no blood loss. It should never be applied till anæsthesia is well established, otherwise collapse may occur.

Knee-joint.

This joint, above all others, yields most excellent results with efficient treatment, and demonstrates the necessity for carrying out the fundamentals in treatment previously described. Granted these are efficiently carried out, it is quite uncommon to see a bad result. Its large size and proximity to the surface make it readily accessible for observation. The large surface it presents for toxic absorption renders sepsis here so dangerous to life that careful observation is required from the outset.

The risk from bone injury varies with the bone affected. Injuries to the patella, even when severe, usually progress favourably. Those to the femur are considerably more serious. Those to the tibia are most serious of all; indeed, when the damage to the head of this bone is at all severe and the case is not operated on within several hours it is usually best to sacrifice the limb at once. These cases above all are prone to give rise to a severe septic arthritis. This is probably due to several causes:—1. The cancellous tissue of the tibia is soft and very open, and so bruises readily and extensively. 2. The tibia is further removed from the centre of the circulation than the femur, and its blood-supply is partly recurrent. 3. The medullary cavity is nearer the joint, and so more liable to a myelitis than in the case of the femur.

Early cases are best treated on the general principles described. In this joint bony lesions may often be isolated from the general synovial cavity by using the extensive and loose synovial membrane for plastic methods. In severe fractures of the patella the whole bone may be removed and the synovial cavity closed up by dissecting up the subcrural pouch and turning it down and so closing the joint.

Where the bony damage is extensive, and can be eradicated by doing so, excision of the joint may be used. Every effort must be made to close the wound at once, as cases left open do not do satisfactorily. Excision must never be partial but always complete, in order to ensure bony union. It must be remembered that this is a very severe operation; unless the general condition is fairly good it is best to amputate as a primary measure.

Late cases require great care and skill in treatment; injudicious or over-zealous interference may be attended by disastrous results. When moderately septic it is surprising how many cases settle down with rest and fixation alone, accompanied perhaps by aspiration. When severely septic excellent results may be obtained by drainage, combined with the use of the Carrel-Dakin method.

Drainage by lateral or anterior incisions is only of use in that small number of cases in which the sepsis is limited to the anterior part of the joint. The turning up of a U-shaped flap including the patella is of little or no value. When either of these methods is employed the posterior part of the joint cavity forms a well in which pus accumulates. The patient rapidly emaciates, and sooner or later the infection breaks through the capsule, by way of one or other of the posterior synovial prolongations, into the popliteal space. Thence it spreads upwards into the hamstring region along the sciatic nerve or downwards into the calf along the posterior tibial vessels.

The only method of treatment that I have found satisfactory is to drain the joint by anterior and posterior incisions.[1]

The anterior ones are made in a coronal plane, far outwards and backwards from the margin of the patella, so that the knife enters the joint along the line of the synovial reflections; these incisions extend from the upper extremity of the subcrural pouch to the level of the lateral ligaments, but ending short of them.

The posterior incisions are made in the following way. A small pair of Spencer Wells forceps is passed under cover of the lateral ligaments and thrust forcibly backwards into the popliteal space; the point of the forceps then lies against the head of the gastrocnemius and near to the surface; the outer one lies on the inner side of the outer head of the muscle close to the popliteal vessels, the inner on the inner side of the inner head. The forceps have in their course passed through the two posterior synovial prolongations. The points of the forceps are then cut down upon by vertical incisions through the skin. The edges of these are then retracted and the respective margins of the muscle defined, and the heads divided half across. The capsule of the joint is thereby well exposed. This is next divided transversely outwards on either side from the middle line of the limb to avoid damaging the popliteal vessels. In this way a perfectly free and wide track is made leading from the surface to the back of the joint and allowing of free drainage of the posterior parts of the joint with their prolongations.

Covered Carrel tubes are then inserted as follows: anteriorly four from side to side, one at the uppermost extremity of the subcrural pouch, one under the ligamentum patellæ, and two others intermediate in position; laterally, one under cover of each lateral ligament and passing backwards through the posterior synovial pouches into the posterior wounds. These last tubes only carry two or three pairs of perforations. Other covered tubes are carefully laid on the surfaces of all the incisions. As a general rule no dressings need be done till the second day, when the covered tubes are removed under gas anæsthesia and replaced by uncovered ones, passed along the tracks occupied by the tubes that have been removed. The tubes must be carefully inserted so as not to break down the adhesions that have already formed. On the fourth day the anterior tubes are removed altogether and the lateral ones changed, these being retained until the sixth or occasionally the eighth day.

Using this method for severely septic cases it is surprising how many limbs can be safely saved from amputation.

Should an extra-articular abscess develop in the upper part of the calf, the best method for securing drainage is by an incision along the inner or outer margin of the gastrocnemius, exposing the fascial plane between that muscle and the soleus. The incision is continued along this plane till the abscess is freely opened up. Finally, an incision of ½ to ¾ inch is made crossways of the belly of the gastrocnemius.

Care must be taken in all septic cases to avoid the formation of a *genu recurvatum* during treatment; this is very liable to occur from softening of the ligaments, generally due to sepsis. It is a very crippling deformity.

[1] See THE LANCET, 1917, ii., 186, Figs. A and B.

When either one or both of the lateral ligaments is torn, and the case becomes at all severely septic, this method is useless. I consider that it is always advisable to amputate such a case without delay.

Excision cannot be advocated for severely septic cases owing to risk of septicæmia and the liability for fibrous union to occur as the end-result.

Amputation should be reserved in early cases for those with severe comminution of femur or tibia, or both; in late cases for those with severe septic arthritis or arthritis of moderate degree, accompanied by division of one or both lateral ligaments.

In septic cases it should, by preference, be performed above the knee-joint. Disarticulation is dangerous for two reasons: first, because of the liability to secondary hæmorrhage from the main vessels (in a number of cases that came under my care, and in which it had been done, this complication arose in 50 per cent.); and, secondly, because the subcrural pouch usually becomes shut off by fibrinous adhesions and distended by septic exudate, with the result that toxic absorption takes place to such an extent that the patient's life is imperilled. Should, however, an amputation through the joint be used, it is essential to remove the patella and lay open the subcrural pouch along its entire extent. The pouch in such a case should not be excised.

Preference, to my mind, should always be given to a supracondylar amputation. Should the sepsis be already outside the joint a higher amputation must be seriously considered.

The Ankle and Tarsal Joints.

These joints are characterised, like the carpal ones, by being chiefly made up of small bones. These latter are composed of light cancellous tissue that readily bruises extensively. They obtain their blood-supply from a relatively small extent of their surface, the larger being covered by articular cartilage. As a result, when any of these bones are involved in a gunshot wound that becomes septic, they are particularly liable to a septic osteitis over their entire extent. These facts suggest the necessity, where there is a fracture of any severity, for resorting to a subperiosteal resection of the entire bone involved—the os calcis is the only exception to this, and occasionally the astragalus. In septic cases X ray examinations made at intervals readily show the rarefying osteitis present and its progress, and yield precise information as to the bones requiring removal and the degree and extent of new bone formation.

The extent and relations of the synovial cavities have a most extensive bearing on sepsis and its treatment. Roughly speaking, the mid-tarsal joint divides the foot into two parts—posterior and anterior. Injuries to the bones of the posterior part are less serious and more easily recovered from, as joints of less extent are opened up; on the other hand, injuries to the anterior part are appreciably more serious, as infection is liable to spread over the full extent of the ramifications of the calcaneo-cuneiform synovial cavity, and then necessitate amputation.

It follows that efficient eradication of sepsis should be practised at the earliest possible time; and in order to allow of bone regeneration and maintenance of the length and, to some extent, the arch of the foot, *subperiosteal resection* of the damaged bones must be employed. Granted this is carried out, and the patient is under 35 years of age, bone regeneration takes place and a useful foot may be obtained that would otherwise have to be sacrificed. With efficient rest and fixation it is surprising how often sepsis remains localised. Should it spread, however, in the synovial cavity it may be necessary to remove subperiosteally one or more of the neighbouring small bones—cuneiforms or scaphoid. When operating on these tarsal cases care must be taken to respect those ligaments that separate adjacent synovial cavities.

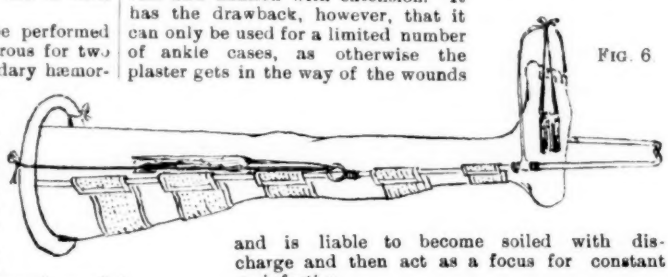
Before resorting to conservative measures it is essential to estimate the amount of concomitant damage to the adjacent tendons: if those of the sole are severely damaged, the foot is best sacrificed at once; but if those of the dorsum only are damaged, it should be remembered that a good deal can be done to remedy the defect at a later date.

The site and extent of any resulting scars, too, are important. Small scars on the outer weight-bearing part of the sole are much more important than those on the inner non-weight-bearing side; indeed, a case that results in a large scar over the weight-bearing surface not infrequently requires amputation later on for pain or recurring ulceration.

Methods of securing rest and fixation.—For the ankle-joint several methods may be used:—

1. *Sinclair's method.*—A Thomas's knee-splint is applied to the limb and extension secured by a plaque of plaster-of-Paris glued to the sole of the foot and secured by bands suitably applied and tied in the ordinary way round the end of the splint. This method is excellent, it allows of absolute rest and fixation with extension. It has the drawback, however, that it can only be used for a limited number of ankle cases, as otherwise the plaster gets in the way of the wounds and is liable to become soiled with discharge and then act as a focus for constant re-infection.

FIG. 6



2. Probably the most useful method for universal application is that shown in the accompanying figure. (Fig. 6.) The entire limb is secured in a Thomas's knee-splint as follows: Bands of suitable material are glued to the sides of the lower part of the thigh and upper part of the leg and passed through loops of bandage fastened by strapping to the sides of the splint above the ankle, as shown; the bands are then brought up to the ring of the splint, suitably tightened, and fastened off; this secures the limb as a whole in the splint. The limb is supported by metal bands. An arch passing well above the toes is then attached to the sides of the splint and the foot slung from it by material glued to as much as possible of the sole of the foot (the least extent that is essential is only quite small). An effort should always be made to secure the foot in slight dorsiflexion to facilitate walking should ankylosis occur ultimately.

3. Another useful method is to secure the leg in a Jones's malleable iron splint for the ankle, as shown. The splint is first bent in such a way as to allow of free access round the foot and ankle for the application of dressings. It is then applied to the limb and the foot slung from the toe-piece, as described above. (Fig. 7.)

FIG. 7 A.

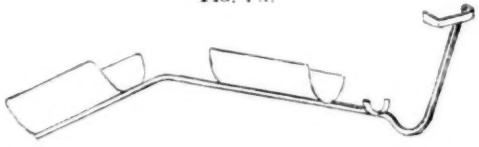


FIG. 7 B.

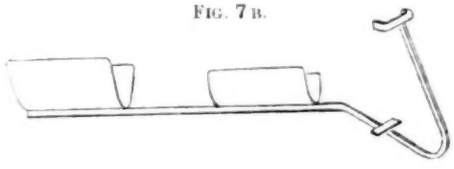
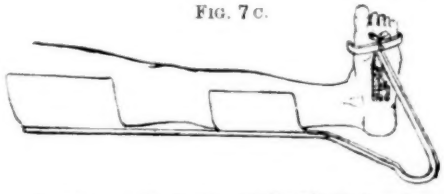


FIG. 7 C.



These last two methods are applicable to tarsal cases as well.

The use of a simple back-splint with a foot-piece cannot be too strongly condemned. Rest and fixation are *not* secured, however much care be exercised; movement always occurs with each dressing.

Treatment of Ankle-joint Cases.

Early cases are best treated on the general lines enunciated above and sutured early. Should the astragalus be widely damaged resection is best practised at once, but is a difficult procedure.

Fractures of the tibia and fibula secondarily involving the joint, if not too severe, do well if all loose and contused bone is carefully removed.

Late cases.—With a septic arthritis, when the astragalus is the fractured bone and is more than slightly damaged, it should be resected, arthrotomy being practically useless, save as a temporary measure to allow of some subsidence of the sepsis in the more severe infections. Where, however, either tibia or fibula is the bone involved and the bony damage is not too severe arthrotomy, with removal of all loose bone, often succeeds very well. When the lower end of the tibia is blown away and the joint involved the limb is best amputated at once; such a case is usually accompanied by extensive tendon damage.

Tarsal Joint Cases.

From what has been described above it is readily seen that the treatment of the gunshot wounds of the tarsal joints is inseparable from and dominated by that of the bones involved. For this reason their treatment will be described under the heading of the individual bones.

Os calcis.—Fractures of the os calcis into the neighbouring joints, even when severe, usually do well after removal of all loose and damaged bone. Any extensive resection is to be avoided as far as possible, otherwise the posterior arch of the foot is liable to be lost from collapse of the heel with, in consequence, considerable crippling of the usefulness of the limb.

Cuboid.—This bone, if severely fractured, yields good results after subperiosteal resection as the sepsis is localised to three small synovial cavities. During resection the tendon of the peroneus longus is liable to have its sheath opened and then slough. If this bone alone is removed regeneration is usually complete and the arch of the foot but little affected. Care must always be taken to prevent, as far as possible, any operation scar from extending on to the tread of the foot.

Fractures involving, either severally or collectively, the *three cuneiform, scaphoid and bases of the second and third metatarsal bones* are particularly important from the extent and ramifications of the synovial cavity that is opened up. They require to be treated with more respect than those of the remainder of the tarsus.

Treatment of early cases.—There is no doubt whatever in my own mind of the superiority of the use of B.I.P. paste in these cases over other methods of treatment, chiefly owing to the infrequency with which these cases need then be dressed.

Late cases.—B.I.P. here does very well, too, but I prefer to employ the Carrel-Dakin method—the cases appear to do better.

It is essential to success to have X ray plates taken at intervals during treatment so that any further bones requiring resection may be treated early. The plates are useful, too, as giving an idea of the progress of bone regeneration.

Amputation.—Should this be required Syme's operation or some modification of it is undoubtedly the best; should this not be practicable an amputation just below the middle of the leg must be practised. If a Syme's amputation is required for severe sepsis in the neighbourhood it is not infrequently of advantage merely to disarticulate and then leave the fibula and tibia untouched, with the flap fully open. Later on, when the sepsis has subsided, the operation is completed by sawing across the ends of the bones and suturing the flap in place.

CONCLUSION.

Of the operative measures described above I have no hesitation in saying that, efficiently carried out, they yield the best results. Different roads may lead to one town—in just the same way different methods of wound treatment, when used in hands specially trained in their respective employment, may lead to almost equally satisfactory results. Those advocated in this paper are the outcome of an extensive experience in war cases spread over a period of three years' close observation, and built up out of series of successes and, more especially in the earlier days of the campaign, out of not a few failures and disappointments. One thing, at any rate, is certain: no method of wound treatment can ever rectify defective surgical procedures or rectify mistakes arising from failure to follow out the fundamental surgical principles that should have been carried out. It is much more the efficiency of the primary operation than the use or not of antiseptics that is the chief factor in determining successful results.

Finally, I would like to thank Colonel C. H. S. Frankau, D.S.O., A.M.S., consulting surgeon, for the encouragement he has given me in the publication of this paper. In addition, I wish to acknowledge my indebtedness to Sister Miller, R.R.C., for the help she has most willingly given me; a number of the most successful results I have ever had are entirely due to her skilful help and scrupulous technique in the operating theatre.

REPORT ON AN

OUTBREAK OF SCURVY IN THE SOUTH AFRICAN NATIVE LABOUR CORPS.

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THE following report upon an outbreak of scurvy which occurred during the spring of the present year among the South African Native Labour Corps is presented, along with observations as to its causation and suggestions for the future prevention of scurvy in Native Labour Corps.

1. *The S.A.N.L.C.: Conditions of Life and Rations in France.*

The South African Native Labour Corps was brought to France for work on the lines of communication. The natives were recruited from all parts of South Africa, and included Basuto, Bavenda, Xosas, Zulus, and other tribes. They were formed into companies of about 450 men, each with its own interior economy. The conditions of living were, as far as possible, modelled on the system obtaining in the compounds of the South African mines. They were well clothed, well hutted, and the diet speaks for itself—an ample, substantial, and varied diet.

Kaffir Personnel.—Field Ration.

Frozen meat	1 lb.	Fresh vegetables	8 oz.
or Preserved meat ...	9 oz.	Margarine	1 oz.
*Mealie meal	1 lb.	English tobacco or cigarettes (per week)	2 oz.
Bread	1 lb.	or Kaffir cigarettes (per week)	3 oz.
Coffee	1 oz.		
Sugar	2 oz.		
Salt	½ oz.	Matches (once a week)...	1 box.

* If the full ration is not obtainable, an equal quantity of rice may be issued in lieu.

The conditions of work were excellent, though in some instances, due to exigencies of the services, the hours were long; but as labourers they proved themselves equal to, if not superior to, any labour of its kind in France.

The health of the contingent has, on the whole, been very good. In 1917 I was for six months in medical charge of four companies of the S.A.N.L.C. on one of the country depôts; they were compounded, but given considerable liberty to go out for walks under supervision, and were thus able to obtain a certain amount of fresh fruit from neighbouring apple orchards. There was not a single case of scurvy in those companies during that period. At the end of 1917 I took over medical charge of four other companies of S.A.N.L.C. who had just arrived in France. These men were given work on the docks in one of the port towns. In order to be near the docks they were accommodated in a single large camp, but owing to the congested conditions of the area it was relatively smaller than the camp of the previous four companies, and being in the midst of surrounding docks and suburbs, the liberty of the natives was very much restricted; but as regards cotting, hutting, and diet the conditions were the same as in the previous four companies referred to.

Each company in the camp had its own separate cooking arrangements.

2. *The Outbreak of Scurvy.*

Towards the middle of March, 1918, two natives in "X" Camp (No. 1 Native Labour Camp), of which I had

medical charge, were admitted to the Camp Detention Hospital with symptoms suggestive of scurvy. A systematic inspection was therefore made of the gums of all the natives in the camp; it was found that 40 per cent. showed a tendency to scurvy, the distribution being equally divided in all four companies. Antiscorbutic measures (detailed below) were therefore instituted; these did not interfere in any way with the work of the companies. During the period from March 15th to April 15th 19 cases of definite scurvy were admitted to detention hospital, all four companies being more or less equally affected.

By April 15th, however, gum inspections showed the tendency reduced from 40 per cent. to 10 per cent. Since that date until August only two cases presented themselves, and the periodic gum inspections indicated a tendency to the condition in less than 5 per cent.

In another ("Y") camp (Nos. 4 and 7 Labour Companies) in this area, having the same number as "X" Camp and living under similar conditions, the outbreak was more serious. The diagnosis of scurvy was first made on May 3rd, though I am given to understand that previous to that date a certain number of cases, undiagnosed, had been evacuated to a base hospital. From that date until July 16th 142 cases occurred.[1] With the exception of two, the cases were derived from three of the four companies of the corps. The only difference ascertained in the conditions of the four companies was that the 33rd Company, in which only two cases occurred, was from time to time given prunes and fruit bought by the company commander from company funds. The reason for this large number of cases in "Y" Camp was that the condition had not been recognised when the first cases occurred, and therefore some time elapsed before antiscorbutic measures were instituted. Towards the middle of May these measures were rigidly enforced and by the middle of July the outbreak had practically ceased.

3. *Symptomatology of Cases.*

There was nothing new noted in the clinical aspect of the outbreak. To one who had not seen scurvy before the diagnosis of the early cases might have been missed owing to the absence of gingivitis.

(*a*) The first symptoms with which the natives generally reported sick, and which could easily be ignored, were indefinite *myalgic pains* in the chest, neck, back, and legs, associated with a certain amount of cramp (subjective) in the calf and hamstring muscles. On inquiry they generally admitted to being easily fatigued and breathless on exertion.

(*b*) *Gingivitis*.—This classical sign, though present in most of the cases to a greater or less degree, was in some cases entirely absent. It varied from a slight swelling of the gums and interdental processes, with a slight blueness of the gum border, to great hypertrophy of the gum tissue. In a few of the bad cases the gums protruded 1/3 to 1/2 inch. The gums were then very red, ulcerated, and septic, and bled freely on the slightest pressure. Bacteriological examinations of the gums were made by Lieutenant-Colonel C. J. Martin, assistant adviser in pathology, who found the material from the ulcerated edges teeming with spirochætes and *Bacillus fusiformis*. These, which are common denizens of the mouth, had, in Lieutenant-Colonel Martin's opinion, taken advantage of the lowered local resistance to invade the gums. At the weekly gum inspections of the companies one had to rely on the condition of the gums for a measure of the scorbutic taint in the individuals—every native showing slight gingivitis, with bleeding on pressure, was considered a potential scorbutic.

(*c*) *Hæmorrhages into muscles*.—This was the most important and prominent feature in almost all the cases admitted to hospital, principally because it lamed the man and incapacitated him for work. In some of the cases it was the only sign present. These hæmorrhages occurred in certain definite muscles or groups of muscles—as a rule the muscles of the calf were affected; next in order of frequency were those of the thigh forming the inner border of the popliteal space. The part affected was swollen to a greater or less degree; pitting on pressure was frequently obtained over an adjoining bone. The swelling was hard and brawny and very tender; it caused the patient considerable pain on movement of the limb. As a rule, only one leg was affected, infrequently both legs, and then the second leg would only be slightly swollen. These swellings occurred at times with great rapidity, which one would expect from a hæmorrhage. A man would sometimes be at work one day, feeling pretty fit; the following morning he would hobble painfully to sick parade with assistance, and one would find the affected calf 2 to 3 inches bigger in circumference than the other. There was no further increase in swelling once the patient was put to bed, and it gradually subsided in five to ten days, but for two or three weeks there remained a certain amount of tender induration.

(*d*) Small *petechial hæmorrhages* into the hair follicles of the leg were almost constant in the cases.

(*e*) Another very constant feature was the roughness of the skin—coarse goose skin—over the upper end of the tibia, and on the legs between knee and ankle.

(*f*) *Anæmia* was present in over half the patients.

(*g*) Cardiac weakness with dilatation was not severe in any of the cases, though in some tachycardia occurred on exertion and a distinct mitral murmur at the apex was present. These disappeared as the patient improved.

(*h*) Subperiosteal and synovial swelling were each seen in one instance.

(*j*) *Fever*. This occurred only in cases where there was much gingivitis, but subsided very rapidly (3 or 4 days) once the oral sepsis was controlled.

The general condition of the patients when admitted to hospital varied; most of them looked ill and drawn, but very rapidly threw this off. In none of the cases did intestinal hæmorrhage occur.

4. *Treatment of the Cases and General Measures Taken.*

The treatment of those already affected consisted of:—

(i.) Full diet with an extra supply of fresh vegetables lightly boiled. When the gums did not allow mastication, solid food was passed through a mincing machine.

(ii.) Lime-juice, ½ oz., was given three times a day. In the last case under my charge I omitted the lime juice and gave three fresh lemons per diem. The rapidity with which the patient improved was remarkable, notwithstanding the fact that he was well over 40 years of age and had very definite gingivitis and swellings of the legs; none of the previous cases that had been given lime-juice made such rapid progress as this one when the lemons were substituted.

(iii.) Iron in the form of mist. mag. co. c. ferro was exhibited to counteract anæmia and the tendency to constipation.

(iv.) Massage to the affected limb, first very gently but gradually more vigorously when the patient could bear the pressure; ordinary liniment. terebinth. was used as a lubricant.

(v.) The gums were treated three times a day with a mouth-wash of hydrogen peroxide, followed by gentle swabbing with pledgets of cotton-wool soaked in 1 to 60 carbolic solution. As a rule the condition had so much improved in five to seven days that the patients could masticate their food and use a soft tooth-brush.

As soon as the patient was able to hobble about the ward with the aid of a stick he was allowed "up" daily for an increasing number of hours, but he was not discharged until all the induration and tenderness of the affected limb had disappeared, nor until the heart had regained its normal action, tested by exertion. Most of the cases were discharged within five weeks of the onset. After discharge the patient was given light duty for a week, but continued to get his lime-juice and iron mixture. Men of under 40 years made a much more rapid and complete recovery than those over that age. To obviate further trouble the following measures were adopted and enforced, and they proved efficacious:—

1. Acting on instructions, particular attention was paid to cooking of fresh meat and vegetables (see paragraphs dealing with the cause of outbreak below). The time of cooking was not allowed to exceed 45 minutes; the food to be cooked was introduced into water already on the boil, and at the end of from 30 to 40 minutes the fires were drawn, but the food allowed to remain in the boiler until it was required for a meal. When necessary it was heated up again for a few minutes before use.

2. The vegetable ration was supplemented by the purchase of extra fresh vegetables, cabbages, carrots, &c., bought with company funds. The carrots were issued raw, and with a little persuasion the natives ate them willingly.

3. A ration of lime-juice, ½ oz., was issued daily to all natives who showed any tendency to scurvy.

Of these measures, the one that seems to have given the best effect was the reduction in the time of cooking fresh food. This statement is supported by the fact that in —— Company of "Y" Camp, in which the disease was most prevalent, and lasted longest, it was discovered that notwithstanding instructions (though extra vegetable and lime-juice were being issued), the boiling of meat, &c., was being carried on for two hours at least, thus keeping up the disease, which soon improved after the cooking was reduced to 40 minutes.

5. *Cause of the Outbreak.*

(*a*) Summary of knowledge of etiology of scurvy.

Scurvy is usually associated in one's mind with sailors on long voyages in sailing ships, living on salt meat; prisoners undergoing long sentences; expeditions of discovery to Arctic regions; and troops besieged for a long period. Recently it has been a problem with which the medical officer has been confronted in connexion with the employment of coloured labourers, removed from their normal home and surroundings. Scurvy is clearly due to lack of some constituent in a diet which is supplied more particularly by fresh vegetables, and is present in fresh meat to some extent. Scientific research in recent years by Holst, and his colleagues, Frohlich and Furst, of Christiania University, and by the Misses Chick and Hume, of the Lister Institute, have proven that an efficient diet must contain certain active principles which they term "antiscorbutic vitamines," and the lack of which in man and certain animals will produce scurvy. The experiments of Holst, Frohlich, Furst, Chick, and Hume have shown that all fresh fruits, vegetables, and roots contain this principle in varying amount, but that it is sensitive to prolonged drying and heat, so that in desiccated and tinned vegetables, and canned fruits, it is to all intents and purposes absent. The cooking of cabbage for 30 minutes was found by Chick and Hume to reduce its antiscorbutic value to less than half, and prolonged boiling to annul it. Seeds of cereals, pulses, &c., are devoid of antiscorbutic value, but attain it on germination, a discovery the practical importance of which will emerge below.

(*b*) Interpretation of the present outbreak in the light of the above facts.

[1] The number of cases in "Y" Camp are those that have come directly under my observation, and will no doubt vary from those eventually notified at headquarters.

As pointed out at the commencement of this report, these men were upon a liberal scale of rations, according to European Army Scale. Half a pound of fresh vegetables is not, however, any too much for a diet which is partaken of over long periods, and is sailing "near the wind" if no opportunity occurs for supplementing, as takes place in the natural circumstances of the natives. This ration of fresh vegetable probably allowed of no margin for reduction in antiscorbutic value by prolonged heating. On investigation it was found that all food was being cooked by boiling for at least three hours, and except in the case of the 33rd Company no fresh fruit was being obtained by the natives, so that their food was, not unlikely, seriously deficient in antiscorbutic vitamines, due to the destruction of these in the fresh potatoes, onions, &c., by prolonged exposure to boiling.

I attribute the outbreak to a combination of these two causes: (1) Inability in the case of certain companies to supplement the diet occasionally with extra fresh fruit and vegetables; and (2) reduction of the antiscorbutic value of the fresh vegetables supplied by excessive cooking. The marked improvement occurring directly in those companies in which measures were taken to supplement diet and enforce a reasonable period of cooking justifies this opinion.

6. *Suggestions for Prophylaxis in the Future.*

Before considering how to obviate scurvy in future it is well to consider further why natives not infrequently suffer from this disease when confined in camps or mines, &c., whereas there is very little scurvy among them living in their kraals in South Africa. Occasionally in spring one comes across a native who may show a slight tendency to the disease, generally in years when the previous kaffir corn (millet) crop has been a failure, but during the eight years I have been in practice in Basutoland I have never seen a single case of well-defined scurvy occurring among the Basutos living at home. During the summer the native has an abundant supply of fresh vegetables, roots, and fruits, but in his kraal, from April to November (the winter and spring months), the average native obtains no vegetables or fruit. He has meat once or twice a month, but his staple article of diet is a thick porridge made with maize or millet meal, and washed down with large draughts of kaffir beer.

One has frequently wondered why he did not develop scurvy by the end of those winter months. An explanation is, however, to hand in the discovery of Furst, verified and amplified by Chick and Hume, that during the germination of seeds the antiscorbutic substance is developed in large amount, for kaffir beer, of which natives partake largely, up to three gallons a day, is a thin fermented gruel made with a *germinated* millet. Thus in the gratification of his appetite for acid, alcoholic beverages, the native appears, unknowingly, to have protected himself from scurvy during the winter season.

Kaffir beer ("Leting" or "Joala") is made by germinating a small quantity of kaffir corn (millet) by steeping it in water for 48 hours; it is then dried in the sun for a day. The same day or the next it is ground coarsely between two stones. This meal is then placed in a large pot, and to it is added boiling water to make a very thin porridge, to which is added a small quantity of yeast (the residue of a previous brew). Fermentation is thus set up and allowed to continue for 36 to 48 hours, after which the whole is strained through a coarse straw strainer; the resulting opaque brownish fluid constitutes kaffir beer, which makes a very pleasant and satisfying drink. The points to be noted in the making of the drink are that only sufficient grain is germinated and ground for the one brew; never is it done with a view to provision for a future occasion. Again, boiling water is added to the meal, but there is no further boiling. Kaffir beer has been largely used in South Africa to arrest scurvy in prisons and mines. It has also been the practice on the Rand to give natives another acid, fermented beverage, "Mahew," and the natives have been supplied with this since landing in France. This is made from the meal of *ordinary ground maize or millet without previous germination*. The meal is stirred into boiling water and the process of boiling continued for an hour or so until a thin porridge is made; this is then evacuated into vats, and some wheat meal is added to cause fermentation. The porridge, after being diluted with a sufficient amount of hot water, is allowed to stand for 36 hours and is then ready for use. It is much more easily manufactured on a large scale than kaffir beer, and for this reason has been used as a substitute for the latter; but it is now clear why this substitute has been without influence to prevent scurvy.

To sum up, the danger of scurvy amongst South African native troops can be avoided by: (1) Seeing that the value of the limited supply of fresh vegetables is not dissipated by unnecessarily prolonged cooking; (2) supplementing this supply by the purchase of fresh fruit or vegetables from corps funds; (3) provision of mildly alcoholic native beer prepared from *germinated* grain of some sort.

In conclusion, I wish to express my gratitude to Lieutenant-Colonel C. J. Martin, F.R.S., A.A.M.C., for the bacteriology of the gingivitis and for the encouragement and advice he has given me in drawing up this paper.

A CASE OF

ABSENCE OF ALL SENSATION.

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THE remarkable case described below is that of a Breton sailor, aged 37, who emigrated to Canada eight years ago and enlisted in the Canadian Army in 1916. In June, 1918, he was admitted to the Military Isolation Hospital, Aldershot, for an attack of mumps, and it was then that the following observations were made.

The patient was a well-developed, powerful-looking man, of a very cheerful, even temperament, highly good-natured, and far removed from the neurotic or hysterical type as popularly conceived. Mentally he was perfectly sound, rather above than below the average level of intelligence. Questioned as to his family history, he would appear to be alone in presenting the peculiar characteristics here described. As a child he appears to have possessed a slight degree of cutaneous sensibility, and he dates its complete absence from the time when he had an attack of yellow fever in Senegal at the age of 17. This was his only previous malady, and he has always enjoyed robust health.

It will be convenient to describe the condition found under the heads of the different sensations.

Sense of touch.—There is complete absence of both superficial and deep tactile sense over the whole skin surface, and also over mucous membrane where attainable. There is no consciousness of deep vibration. A tuning fork not being available, a poker, the end of which was allowed to fall from the height of about a foot on to the tibia, the ribs, or the skull, produced no sensation of any kind—the patient, with eyes closed, not even knowing that he was touched. He does not feel the ground with his feet, and experiences difficulty when walking at night. He states that his inability to bring his heels together at the command "Attention" without controlling the movement with his eyes has frequently led him into trouble with his drill-sergeant. There is complete inability to recognise objects placed in the hand when the eyes are shut.

Sense of pain.—This is completely absent. In October, 1916, at the Hôpital de St. Louis at Quebec he underwent the radical cure of double inguinal hernia without anæsthetic of any kind, the patient being totally unconscious of any sensation either of pain or touch. His body is plentifully strewn with the scars of wounds and burns which he has inflicted on himself either for bets or to astonish the onlookers. I have myself seen him on more than one occasion hold a burning match against the skin of his arm for the space of 10 or 15 seconds, and then unconcernedly pick off the charred epidermis. He never suffers from headache, toothache, abdominal or other visceral pain of any description. The cornea, it may be noted, shares in the general anæsthesia.

Thermal sensation.—This is also absent. On placing the fingers in water so hot as to raise a blister, but well below boiling point (the eyes being closed), there was a slight convulsive movement of the hand, and he stated he was conscious of what he described as an electric shock, saying that he remembered feeling such a sensation when a boy. The feeling, he affirmed, was not a painful one. The placing of the hand in cold water evoked no sensation. There is no perception of temperature in food or drink. There is insensibility to atmospheric changes of temperature. The extremes of heat and cold encountered during sea voyages produced no corresponding changes of sensation. He states, however, that the great cold experienced on one occasion while rounding Cape Horn gave rise to vaguely unpleasant sensations. During the attack of yellow fever mentioned above he remembers the fact of his violent shivering followed by profuse sweating, but was unconscious of the feeling of cold or heat.

Muscular sense and sense of position.—The muscular sense appears to be completely absent. With the eyes closed, if asked to make any movement with his arms—the choice of movement being left to him—he is incapable of doing so, saying he cannot tell if his arms are moving or not, and all he can accomplish is a slight convulsive twitching of the hands and arms. On the other hand, if when standing upright with closed eyes he be told to walk

towards the observer he does so without trouble. He states, too, that he is a good swimmer. These two facts are difficult to reconcile with the apparent incapacity to move his arms with closed eyes. Again, if with closed eyes his arms and fingers are extended and any small light object be placed in one hand, and a much heavier object (such as a heavy iron bar or a solidly-made wooden chair) be placed in the other, and he then be told to close his fingers—a movement which he performs with apparent difficulty—he is incapable of saying which hand holds the heavier weight, he is quite ignorant of the nature of the objects, and most frequently he is unconscious of the fact of anything having been placed in his hands. If an object held in the hand be very bulky and if the fingers be closed very forcibly on it he is generally able to say that there is *something* in his hand without knowing what. He appears ignorant of the meaning of fatigue, and asserts that the only means by which he is made aware of his failing strength, under any intense or prolonged effort, is by his falling to the ground.

The sense of position is equally absent. With eyes closed he is unable to bring the tips of the index fingers into contact, to touch the tip of his nose with a finger, or to locate his hand when placed by the observer in any given position. If asked to raise his hand from its position resting on his knee and to touch his head, his eyes being closed, he appears completely nonplussed, and, as noted above, responds only by slight jerkings of the hand. With visual control all his movements are perfectly coördinated and in every way normal.

He exhibits the phenomenon of the fixation of the limbs in the positions in which they are placed. Thus, the patient is placed on his back with arms stretched out by the sides, and legs extended. The eyes are closed. If now the observer takes the patient's limbs and places them in any position (for example, both arms raised in the air above the head, and one leg raised with the thigh flexed and the knee bent), he is totally unaware of having been touched or of any change of position in his limbs, and the arms and legs remain fixed where they have been placed without conscious muscular effort on the part of the patient. On opening his eyes he manifests genuine surprise at his attitude.

Sense of taste.—Completely absent. The patient's eyes being closed, about half a drachm of such substances as sugar, salt, pepper, mustard, also a drop or two of an essential oil (oil of cloves), were in turn placed upon his tongue, and each in turn thoroughly insalivated, and finally swallowed, but all failed to produce any sensation of taste, the patient being unconscious of any substance in the mouth. It may be remarked that he eats anything, as the fancy takes him. On one occasion he was found to have consumed a lump of bath-brick about the size of a hen's egg that a hospital orderly had inadvertently left in his way. He states that he is in the habit of eating uncooked—when he can get hold of them—such animals as rats, mice, dog, or serpent.

It appears that he is never conscious of hunger or thirst. It was not practicable under the circumstances to put this statement to the test, but he relates that for a bet he once refrained from food and drink for eight days and nights. He felt no inconvenience beyond, towards the end of the period, an abnormal tendency to sleep. At the completion of the fast he asserts that he returned to work in no way harmfully affected, and not conscious of any special craving for food or drink. This is recorded without guarantee as to its truth, as it was related by the patient.

Sense of smell.—Practically non-existent. Such characteristic odours as those of the oils of cloves, cinnamon, peppermint, the tincture of orange failed to produce any sensation. Fuming nitric acid was equally ineffective when strongly inhaled. On the other hand, the fumes of the strong solution of ammonia and of pure hydrochloric acid produced a faint sensation of an odour which the patient remembered to have smelt in his youth.

Reflexes.—The only response on both sides to plantar irritation was slight abduction of the little toe. The patellar reflexes were present and normal. The orbicularis palpebrarum muscles contracted on touching the cornea, though no sensation was evoked. The pupils reacted to light and accommodation.

Defæcation.—The bowels usually act regularly once a day. There is no conscious desire to defæcate beyond what he describes as an occasional "rolling" in the abdomen. He never exerts any effort, nor is there knowledge of the passage of the fæces. Only when there is looseness of the bowels is there any incontinence.

Micturition.—Ordinarily this occurs during action of the bowels once in 24 hours at about 8 o'clock in the morning. He asserts that usually he does not again micturate till the same time on the following morning, but as a precaution he generally gives himself the opportunity to pass urine at about 4 o'clock in the afternoon as well, but often without result. Only in the event of his taking more fluid than usual and failing to take the precautions he has learnt by experience to be necessary is there incontinence of urine. There is never desire to micturate.

Finally, he seems to be without most of the common emotions. He is without family affection—the fact that he believed his mother to be dying in no way disturbed him. He makes neither friends nor enemies. He has no love of country or home. But he would appear to be a smart and efficient soldier and takes a pride in it. He was always very active, ready, and willing to help in hospital duties.

Diagnosis.—A few words may be said as to diagnosis. The most satisfying explanation of the thermic insensibility would be the existence of syringomyelia. The fact that the condition of the patient is practically congenital is compatible with the developmental nature of the spinal lesion in this disease. It may be objected that the motor system is so far unaffected, but the course of the disease is well known to be very slow. Osler, in his "Practice of Medicine," notes one of the types of syringomyelia described by Schlesinger in his monograph (1895), to which this case would in some measure conform—"with predominant sensory features, simulating hysterical hemiplegia, *or with general pain and temperature anæsthesia*." At the same time there are certain inconsistencies in the clinical picture which point to a possible admixture of hysteria. He is a good swimmer, which implies the performance of regular coördinated movements of the legs without visual control. Yet on being invited to perform movements of the arms with closed eyes he was completely at a loss. He was also able to walk with eyes shut. The diagnosis of syringomyelia combined with hysteria is therefore suggested as one which seems to meet the case.

THE PREVENTION OF RELAPSE OF HYSTERICAL MANIFESTATIONS.

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THE first essential in the treatment of hysterical manifestations is accurate diagnosis, as has been pointed out by Fearnsides and others.[1] Without going over the debatable question of reflex paralysis described by Babinski and Froment, it is necessary to remember that many patients who present hysterical manifestations show signs of organic lesions also. In many whose chief symptoms have a psychological origin, readily removed by psychical treatment, a gross organic lesion is present, situated anywhere between the cerebral cortex and the periphery, giving rise to less prominent manifestations, and naturally remaining uninfluenced by psychical treatment. Putting aside these cases, and they form by no means a small percentage of the total admissions to every hospital at which cases of functional nervous disorder are treated, and dealing only with those patients in whom the manifestations are wholly of functional or "hysterical" origin, the question arises whether the removal of the obvious symptoms is the same as the "cure" of the patient; on clinical grounds it is certain that the two are not identical.

For the first few days after the removal of gross objective disabilities, patients, who have been admitted suffering from a functional nervous disorder, are usually genuinely pleased; they have a sense of increased well-being and are deeply grateful. Later, however, many complain that they are not feeling so well. If asked how they are, many will say "My head is bad," although headache may not have been a symptom previously complained of; or they may reply that they do not feel so well in general condition as when they were admitted. When making inquiries of this sort it is needless to say that care must be taken not to suggest to the patient any symptom, such as headache. But if the patient be asked in the most general terms how he is, especially if the question be put in a cheerful tone, in a manner which anti-

cipates a favourable reply, it cannot be said that any suggestion has been made. Now it is undoubtedly true that the majority of medical men who treat and rapidly remove hysterical symptoms by methods which depend on some form of suggestion alone, hold a contrary view. They teach that the "cure" of the symptom is usually followed by improvement in general well-being. From a study of the published works of those who hold this view it may be assumed that the explanation of this discrepancy is, that after the symptom has been removed, these authors do not apparently think it wise to question the patient further. Contrary to what is usually believed, if the neuropath be not questioned, the doctor will not be told much; these patients do not talk about their symptoms to those whom they do not consider interested. A recent writer[2] has even gone so far as to state that "there is no such thing as hysteria apart from hysterical symptoms." One holding this view could hardly be expected to probe far, after such symptoms were removed. In another work dealing with the rapid cure of hysteria by persuasion[3] the same author states that "so far as we know relapses have not occurred after discharge (from hospital) except during air raids among men living in London. This is an additional argument, if any are still necessary, for the removal of all patients, officers as well as men, suffering from war neuroses out of London." It is, however, more than possible that it is an argument that the method of persuasion which this author employs is inadequate, and indeed an argument that there is something in hysteria besides the symptoms.

The removal of hysterical symptoms in these war cases is not difficult. Any doctor who will take the trouble to listen attentively to the whole story which the patient tells, who makes a careful, complete clinical examination, who is able to make up his own mind definitely that the symptoms have a functional origin, and who then so expresses himself that the patient becomes aware of all this, will be rewarded by the speedy disappearance of these symptoms. Some doctors seem to be fortified by the use of aids such as electricity, hypnotism, or manipulations; others by making the patient half drunk. But none of these things are necessary, and in the end most of them are harmful. The simple explanation that it is want of confidence on the patient's own part which is keeping the symptom still in existence, and very quiet directions telling him what to do will suffice, provided that all the foregoing conditions are observed.

At this stage, however, the patient is not cured. He is not yet cured because that which underlay the hysterical manifestation has not yet been touched. Two undesirable happenings may ensue: either (*a*) the patient may begin, or continue, to complain of other symptoms, such as headache, or (*b*) during some time of emotional stress, such as an air raid in London, the symptoms may reappear. Much can be done for the latter contingency by prophylactic education. Every patient should be instructed that in the future, and at any time, his symptoms may return as an emotional reaction. Should this happen, and he recognises that it is analogous to a transitory flood of tears, it will not persist, and little inconvenience will be caused. If, on the other hand, he thinks that the dread disease has returned because he was not fully cured, the want of confidence which such a thought engenders may prolong the reaction indefinitely. Then his state will be as it was before the "cure."

G. R., after an attack of "trench fever," suffered from tremors so gross as to prevent him walking. He was treated for several weeks in France with rest in bed; then he was evacuated to England, and in a single hour the tremor and difficulty in walking were "cured" by persuasion, but no explanation was given. Two months later he returned to his depôt. There he immediately collapsed and remained in a state of complete astasia-abasia till he could obtain further treatment.

This case may be contrasted with that of D. McH., who was admitted to hospital suffering from a flaccid, hysterical paraplegia. He was cured by persuasion, and the nature of an affective response was explained. One night a few weeks later there was an air raid. The patient wanted to get up in order to go to the subway, to which any patient may proceed on such occasions. To his surprise he was unable to move his legs. Remembering what he had been told, he thought for five minutes of the explanation, which to him had been given previously; then he got up and walked to the subway.

An air raid and a return to depôt are both events associated with emotion; he who cannot stand the one is not likely to stand the other. For the success of the method, the means employed must be of the simplest. The man must be convinced that it was he himself who worked the "cure," or he cannot hope in future to "cure" himself. It is impossible to make use of this method if the man has been treated with electricity or manipulations, &c. For then he is certain to believe that it was the "agent" which effected the "cure." But if all that the medical officer did was to tell him that he was able to talk or to walk, and he thereupon did so, he can reasonably hope to repeat the "cure" by himself if necessary. Experience proves that he usually can do this. Care must be taken that the "cure" does not occur whilst the patient is being so much as touched. Thus a dumb man unfortunately recovered his speech while his throat was being examined with a laryngoscope. This patient relapsed, and was unable to "cure" himself because he believed that the mirror had been the instrument of "cure," and that the use of some objective apparatus was essential.

A better way to prevent relapse, better because it deals also with the concomitant symptoms, is to find out why the patient ever had an hysterical symptom at all. There is something in hysteria besides the symptoms; there is evidently some special tendency for the patient to react in this abnormal way; there is always a series of other symptoms, such as headache, insomnia &c. The individual is out of harmony with his environment, and inquiry will show that the mal-adaptation is psychical. He has some trouble, and this must be brought to the surface. The object of this is simple. When two people discuss a difficulty, a reasonable view of it is more likely to be taken than when it is brooded over alone. After such a discussion the patient looks at his trouble in a different and happier way. Moreover, some idea may be brought to light, some thought which had determined the form taken by the hysterical manifestation, and this will impress on him the more how he may become the master of his health.

A. D. had total paralysis of the right arm, which hung like a flail by his side. It had come on suddenly one morning at dawn eight months previously; he had been on duty all night in an observation post, and had just been relieved. He was climbing out of the post, using this arm to pull himself over a parapet, when the arm became paralysed and he fell back into the trench. He could not account for it in any way. By a process of thinking back he was soon able to recollect what had been in his mind at the moment the arm gave way—viz., that this morning was lighter than usual, and that he might be seen and sniped. The proof that the symptom had occurred, not as a result of disease, but as a pure "defence," was now made very clear to the patient, who returned to duty in a few weeks.

Not always will anything so striking as this be discovered, but with careful inquiry some point of psychical importance will be found, most often of a nature which has caused pain to the patient—fear that he has been a coward, that he will become insane, that he will suffer much disability in future—needing only discussion to be dissipated. To obtain this information time and patience are essential; most of it can be got by ordinary conversation, and the proper taking of the history. The best description of the way in which this should be done will be found in Déjerine and Gauckler's Psychotherapy.[4] Rarely will it be necessary to employ more difficult methods than those there laid down, for these matters have not as a rule been so pushed out of consciousness that ordinary conversation will not reveal them. With patience events that have not been thought of for as many as 20 or 30 years may be brought to light. Should, however, this simple method fail we need not be afraid of psycho-analysis. We shall not as a rule, unless we are looking for them, be troubled with distressing sexual matters, as Rivers has shown.[5] The method is, however, rarely needed; time and gentleness yield an amount of information incredible till they have been tried.

When we have relieved the patient's mind by getting him to see his trouble in a different light it will be found that his capacity to withstand emotional reactions, such as those brought about by air raids, thunder, or the return to duty, has so much increased that he no longer meets them by the feeble defence of an hysterical symptom.

I have to thank Major R. Worth, R.A.M.C., for permission to quote the cases mentioned in this paper.

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ON ABDOMINAL EVACUATION OF THE PREGNANT UTERUS BEFORE VIABILITY.

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THE appreciation of the fact that an incision through the uterine wall, provided the uterine cavity is not infected, can be stanched of blood, sutured, and got to heal with perfect security and safety has immensely enlarged the scope of hysterotomy.

Practically restricted in the older days to the timorous performance of Cæsarean section, it can now be employed not only for the abdominal delivery of a living child, but for the enucleation of fibroids, single or multiple, deeply embedded in the uterine wall, for the exploratory opening up of the uterine cavity in cases of menorrhagia or metrorrhagia of obscure origin, and for the extraction of the products of gestation before viability. It is with this latter application of hysterotomy that I now deal.

Conditions in which the Operation is Indicated.

What are the circumstances under which it is preferable before viability to empty the pregnant uterus through the abdomen? In the main there are three sets of circumstances, as follows:—

1. *When in addition to evacuation sterilisation of the patient is required.*—In certain cases of pregnancy in tubercular women the uterus should be emptied at once and further pregnancy prevented by ligaturing or removing the tubes. As a typical case of this sort I may instance that of a woman who, having had several children, developed acute phthisis whilst carrying the last one. Treatment in a sanatorium resulted in recovery sufficient enough to allow her to return to her home and household duties, when she promptly became pregnant once more.

Again, in valvular disease of the heart with compensation, already trembling in the balance, pregnancy should be arrested as soon after its initiation as may be feasible, and further conception rendered impossible.

Much rarer than these two instances are those cases in which pregnancy is habitually followed by some dangerous disturbance of the economy, as, for instance, by nephritis, diabetes, hæmolytic anæmia, or insanity. In all of these evacuation of the uterus should be combined with a sterilising operation. Finally, cases of physical deformity incompatible with continued pregnancy are sometimes met with, such as extreme kyphosis.

The older course in all these cases was to first evacuate the uterus through the cervix or to induce abortion, and then to open the abdomen and ligature or remove the tubes. I have abandoned this practice for some years, believing it to be faulty, more especially if the pregnancy has advanced beyond the third month, and, having opened the abdomen, I now deliberately incise the uterus through its anterior wall, shell out the pregnancy, close the uterine wound with three mattress sutures and a superficial continuous suture, and then ligature and cut off the outer halves of the tubes. By this means the proceeding is shortened and simplified, and, moreover, rendered absolutely aseptic, for the uterine interior is sterile to start with, and, for the rest, I have the factors that will keep it so entirely under my command. It is doubtful to my mind whether evacuation through the cervix can ever be carried out without introducing some organisms into the uterus whilst the commonly used means of inducing abortion, the bougie and tent, almost certainly act as organismal conveyers.

2. *When the pregnancy has advanced to the fourth month or over and its termination is urgent.*—The evacuation through the cervix of a pregnancy of five or six months' standing is a formidable operation. The extraction of a head of even four months' growth needs a degree of cervical dilatation which almost always splits the cervix. At five or six months sufficient dilatation cannot be obtained even by deep splitting, and the surgeon is obliged to incise the lower pole of the uterus along its anterior wall from the external os upward to the peritoneal reflection—the so-called vaginal Cæsarean section.

Vaginal Cæsarean section is an operation for the expert alone, particularly in women who have not previously borne children; but its greatest drawback is that it inflicts a wound in the uterus through a passage (the vagina) that cannot probably with certainty be rendered initially sterile, and certainly not kept sterile during an operation of some duration.

For these reasons I have for a long time now adopted the abdominal route for the removal of a pregnancy of four, five, or six months' standing in cases of gastro-hepatic or cerebro-renal toxæmia (pernicious vomiting and eclamptic nephritis) or such other gravely menacing complications of pregnancy.

3. *In certain cases of pregnancy complicated by fibroids.*—Every now and then one comes across cases of early pregnancy complicated by fibroids in which the tumour or tumours force surgical intervention. It should be a cardinal rule in the surgery of fibroids that whenever the uterus bearing them is also pregnant the removal of the organ should be avoided if possible—it has proved its domestic and national value.

Now the uterus nearly always can be spared. Pedunculated fibroids can be removed and the pregnancy left *in situ*, abortion only rarely following. But this is not so if the tumour or tumours be embedded, for then their removal alone will almost certainly be followed by abortion. Moreover, the suture of the cavity or cavities left in the uterine wall after the enucleation is not likely to be satisfactory if the organ be still distended and vascular from the pregnancy within it, and further, if the organ empties itself within the next 48 hours there is a considerable chance of intraperitoneal bleeding from the blood-stanching sutures becoming loose. For this reason it has been the custom to remove the pregnant uterus with the fibroids in such cases.

But why not treat the pregnancy like another fibroid, enucleate it too, and leave the patient with her still competent organ? She can, and will, become pregnant again *minus* the disability of concomitant myomatous growth. Fears may be entertained that the scarred uterus will not stand the strain. They are groundless. Of all tissues I believe the uterine muscle has the most perfect healing powers. You can never find the uterine scar of a previous Cæsarean section when you open the abdomen to perform the operation for a second time, and I have had two opportunities now of viewing a pregnant uterus on which I had previously done myomectomy, and the same was true.

Conclusion.

In conclusion, then, I feel sure that under the several circumstances I have detailed, the early pregnant uterus should be evacuated through the abdomen.

The technique is just that of a Cæsarean section, than which it is an even easier operation. The uterine incision needed is smaller, of course, the bleeding is less, and fewer mattress sutures are required to close the hole and stanch the blood-flow. I use silk (No. 4) for these sutures, and insert a continuous suture of No. 2 30-day catgut to bring into apposition the peritoneal edges: these stitches should pass deeply. One c.cm. of pituitrin should be given just before the operation and repeated during the suture of the uterus. The incision should always be made through the *anterior wall* for two important reasons: first, so that the uterine wound may present towards the bladder and thus avoid adhesion to the intestine; and, secondly, so that if persistent oozing goes on from the needle punctures the uterus can be fixed to the anterior abdominal wall by two or three silk sutures along the line of the uterine incision. Oozing from the uterine incision or needle punctures is dangerous, because the effused blood attracts coils of intestine to adhere to the uterus.

Before deciding that oozing from these sites is really persistent, put the uterus back into its place and watch it for a minute or so. So long as it is outside the abdominal wound it tends to bleed, because the venous return is interfered with by the traction on the broad ligaments and the nipping of the abdominal wound edges. In this regard the uterus is like the kidney pulled through a loin wound; moreover, no uterus will retract perfectly until it is back in its proper place.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF POLIO-ENCEPHALITIS TREATED WITH NOVARSENOBILLON.

BY ERIC BAYLEY, M.D. LOND., F.R.C.S. ENG.;
AND
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SURGEON LIEUTENANTS (TEMPORARY), R.N.

IN the following case the improvement in symptoms after N.A.B. treatment and lumbar puncture was very marked. It is difficult to say to which the patient owed most. The lumbar punctures relieved the pressure symptoms, but the progress might not have been so rapid without the N.A.B.

On June 27th a leading telegraphist, living ashore, was admitted to a naval hospital ship in home waters, suffering from headache, slight fever, and persistent vomiting of cerebral type. The optic discs appeared normal. Lumbar puncture was performed and 50 c.cm. of clear fluid under increased pressure were withdrawn. The fluid contained 400 cells per c.mm., nearly all small lymphocytes. No micro-organisms were discovered.

In the next few days further cerebral symptoms developed. Nystagmus, squint, retraction of head, Kernig's sign, absence of knee-jerks, and extensor plantar reflexes were noted. There were no signs of cerebral irritation, and apathy was a distinctive feature. Temperature never rose above 100° F. A second lumbar puncture carried out when these symptoms were at their height yielded a result identical with the first. The diagnosis at this stage was by no means clear. It rested between syphilitic or tuberculous meningitis and epidemic polio-encephalitis. Examination of the cerebro-spinal fluid had excluded cerebro-spinal meningitis.

Six months previously patient had acquired syphilis. The diagnosis was made by examination of exudate from primary sore by dark-ground illumination, and no secondary lesions were seen. He was treated with 1·9 g. of galyl given in six doses at weekly intervals, the last dose being given on March 12th, 1918. Grey powder, six grains per diem, was given from May 20th to June 20th, and, at the time of admission, the patient was suffering from severe mercurial stomatitis. No record of any Wassermann test was found in his service syphilis sheet. In view of this history the question as to whether syphilis was the cause of the present illness had to be carefully considered, particularly as several severe recrudescences of syphilis in patients treated with galyl had been seen by one of the writers during the last two years.

The blood serum and the cerebro-spinal fluid were therefore sent to Haslar for the Wassermann test, and in the meanwhile treatment with novarsenobillon (N.A.B.) was begun. Following the combined treatment by these injections and by lumbar puncture, there was decided improvement. The apathy cleared away, squint and nystagmus disappeared, and the speech, which had become slow and indistinct, rapidly improved. No difficulty in swallowing had been present at any time, nor had there been any salivation or dryness of mouth.

The report on the Wassermann tests was negative for both serum and fluid. Two interpretations could be attached to this report: either patient was free from syphilis, or so few spirochætes were present that insufficient reacting substance had been formed in his body to give a positive reaction.[1] If the latter hypothesis be adopted it may reasonably be supposed that such a slight syphilitic affection could not give rise to the severe symptoms exhibited by the patient. Syphilis may therefore be excluded except as a possible predisposing cause.

A third lumbar puncture, performed when patient showed signs of improvement, produced a fluid having only 60 cells per c.mm. The injections were then stopped as patient continued to make satisfactory progress. Recovery was uninterrupted and in less than a month from the date of admission he was sitting up in a chair playing draughts, reading books, and writing letters. From a detailed report kindly supplied by the Medical Director Commanding a U.S. Naval Base Hospital, to which the patient was discharged, it appeared that satisfactory progress was maintained. The Wassermann test was negative in cerebro-spinal fluid on August 8th and in the blood on August 8th and 13th. 38 cells per c.mm. were present in the fluid on the 8th.

The rapid recovery excluded the diagnosis of tuberculous meningitis, and the absence of signs of cerebral irritation favoured the final diagnosis of polio-encephalitis.

Cerebro-spinal Fluid.

Date.	Quantity.	Reducing substance.	Globulin.	Total proteid.	Cells per c.mm.	Wassermann reaction.
July 2nd	50 c.cm.	+	++	0·1%	405	—
,, 5th	30 ,,	++	++	0·1%	421	Negative in all dilutions
,, 18th	35 ,,	+	+++	0·12%	61	—
,, 24th	45 ,,	+	Blood contamination.			—
Aug. 8th	—	—	++	—	38	Negative.

+ = present in normal amount. ++ = slightly increased. +++ = moderately increased.

[1] See Fildes and Parnell, Journal of the R.N. Medical Service, July, 1918, p. 267.

Treatment.

July 2nd ... ... 0·15 g. N.A.B. intravenously.
,, 4th ... ... 0·30 ,, ,, ,,
,, 7th ... ... 0·30 ,, ,, ,,
,, 10th ... ... 0·45 ,, ,, ,,
,, 13th ... ... 0·45 ,, ,, ,,
,, 16th ... ... 0·45 ,, ,, ,,

Interest centres in the pathology of the cerebro-spinal fluid. A large excess of small lymphocytes is found in the fluid in syphilis of the central nervous system, in tuberculous meningitis, and sometimes, though not in the acute stage, in cerebro-spinal meningitis. It is also found in acute poliomyelitis, and presumably, therefore, may be found in association with acute polio-encephalitis. On the other hand, in a fatal case of polio-encephalitis under the care of the writers, of which the diagnosis was confirmed at autopsy, the fluid was clear and free from excess of lymphocytes.

The writers beg to acknowledge the courtesy of Surgeon Commander C. L. W. Bunton, R.N., by whose permission the case is published.

ACUTE PNEUMONIA FOLLOWED BY PNEUMOTHORAX; FEMORAL THROMBOSIS; RECOVERY.

BY REGINALD G. HANN, M.R.C.S., L.R.C.P. LOND.,
FORMERLY MAJOR, R.A.M.C. (T.)

Emerson, in his exhaustive monograph on pneumothorax, says that pneumonia was early considered a cause of pneumothorax, and that it was not until Skoda "had emphasised the presence of the hyper-resonant note, suggesting air which is present in pneumonia and in pleurisy, over the not-yet-involved lung that these cases were recognised as not pneumothorax." Its rarity is shown by the fact that in Biach's collection of 918 cases of pneumothorax not one is ascribed to pneumonia, and that in 7868 cases of pneumonia which formed the basis of a discussion on the complications of that disease at the Royal Society of Medicine only three cases (two fatal) are to be found. Nor is this rarity a matter of surprise, for the alveolar consolidation of pneumonia would appear, on theoretical grounds, to act as a bar to such an accident.

In the present case it is significant that there was a history of winter cough, and however trivial it may have been and the anatomical change causing it, it certainly suggests the rupture of an emphysematous bleb.

An infantry private, aged 35, prior to enlisting in January, 1916, had worked as a tram-driver, necessarily exposed to all weathers. He had had no illness of importance, but a winter cough kept him from work occasionally, though his average loss of time did not exceed two or three days per year; during his first two years in the Army he was never ill.

Early in April he was in the front line in Flanders under very bad weather conditions, being continuously cold and wet; he felt ill, but kept on until the onset of a rigor, and then went to hospital. His record shows that he had a right lobar pneumonia running an ordinary course, with a crisis on the sixth day (April 13th). He improved, crossed to England, and was admitted into hospital under my care.

The following are the notes of his condition:—

April 23rd: Looked and felt ill, complained of pain in chest and shortness of breath. Right lung: impaired resonance apex and base with redux crepitations at base and a few rhonchi elsewhere. Increase of V.R. and V.F. Left lung normal. No bronchitis. Heart normal in size, position, and sounds. *The signs were those of a normally resolving pneumonia.*

April 27th: Has not improved as a pneumonia should in the time; pain in chest; dyspnœa. Signs at apex as before: at base indefinite (he was too uncomfortable for prolonged examination). Heart apex is now 1 in. outside nipple line.

April 29th: Respiratory movements and inspiratory retraction of intercostal spaces equal on the two sides. Right side tympanitic from apex to level of sixth space in nipple line and lower in axillary line. Behind tympanitic at base; note doubtful at level of scapula. Amphoric breathing and beautifully clear and numerous tinkling metallic sounds were heard over whole of right lung, except posteriorly in scapular region. They were loudest in front in axillary line below nipple level and behind over lower lobe; at apex, and above clavicle even, amphoric breathing was clear, very high-pitched and distant. Whispered voice sounds clear and metallic. No moist sounds; no signs of pleural effusion. Sputum profuse, blood-stained, ropy; no tubercle bacilli found. Heart further displaced to left; its right border is level with the left edge of the sternum. *The signs were those of extensive pneumothorax with considerable air-entry into the collapsed lung.*

May 2nd: General condition improved; less pain; sputum more profuse, more frothy; no blood.

May 4th: Whole of right side of chest tympanitic. Inspiratory indrawing of intercostal spaces most pronounced on right side; bulging of spaces on right side during coughing or forced expiration. Breath sounds almost inaudible from apex to nipple level, below this amphoric breathing present; no metallic tinkling, no coin sound. Posteriorly whole lung area tympanitic with almost entire absence of breath sounds. The physical signs had therefore again changed; the silent area had largely increased and area of amphoric breathing diminished. *The signs were those of lessened lung expansion and of an increase in volume of the air in the pleural cavity.*

May 6th: Right side almost entirely silent; cavernous whispering sounds at base. Blood examination: No leucocytosis, nor did white cells suggest any inflammatory process. Liver not displaced.

May 16th: Left femoral thrombosis after a premonitory day's pain in leg; swelling of leg and thigh, skin blue-grey, much pain, pyrexia. Chest: Little change; if anything there was less evidence of air entry into right lung, though excursions of chest wall were as great as on left side. Increase downwards in silent area; no protrusion of intercostal spaces on expiration or on whistling. Pulse small, low tension, feeble. Heart sounds poor.

May 22nd: Practically no breath sounds were to be heard on right side, except about root of lung posteriorly.

June 6th: Right side of chest in front absolutely silent. Hyperresonant.

June 8th: General condition began to improve. Vesicular murmur heard in axilla and about base of lung; deep breathing increased area over which this was heard. Heart displacement as before.

June 29th: Leg recovered; no swelling; some discolouration. Easy passive movements commenced. Breath sounds heard faintly over wide area; also for first time pleural friction sound in front and in axilla.

July 28th: Breath sounds heard over whole of lung, but, generally speaking, were fainter and more distant than on left. Is able to stand out of bed.

From this date his recovery though very slow was continuous until by Sept. 2nd the only abnormality recognisable was a suggestion of distance in the breath sounds then to be heard throughout right lung; the heart had regained its normal position.

Summary.

This case afforded an excellent opportunity of observing a pneumothorax due to a rupture—probably valvular—of the pleura during coughing from its gradual onset to its practical cure—a period of over four months. The slow and deliberate increase in the amount of air in the pleural cavity with the concurrent collapse of the lung was easy to follow, distinguished as it was by its classical signs; its fullest extent was not reached until about three weeks from the onset. To what extent its course was modified by the resolving pneumonia no indication was afforded. This was succeeded by a stationary period of another three weeks before the first signs of vesicular breathing reappeared (i.e., about June 8th—six weeks from the onset). The characteristic auscultatory signs of pneumothorax were only to be heard for about 10 days (from the third to the thirteenth of the disease). The exquisite metallic tinkling was of short duration (a few days) and appeared in the absence of any pleural effusion. The behaviour of the heart in its displacement was a typical instance of its sensitiveness to any change in intrathoracic pressures; it was almost the first warning to be recognised of the grave happenings in the chest, and only towards the end of convalescence was its normal position regained.

Some Former Recorded Cases.

1. Graves (*Dublin Journ. of Med. and Chem. Sci.*, 1834; quoted from Emerson, *Johns Hopkins Hospital Reports*, 1903): Man aged 40. On the fourth day of dullness lower down from the clavicle to below the nipple, percussion yielded a "preternaturally clear and hollow sound." Physical signs of pneumothorax disappeared in about 16 hours. One is not surprised to find that the diagnosis in this individual has been doubted.

2. Rumpf (from Emerson) (Beitrag zur Lehre vom Pneumothorax, 1849): Pneumonia followed by bronchiectasis, with gangrene and pneumothorax.

3. Monneret (from Emerson) (*Arch. gén. de Méd.*, 1851): Acute pneumonia, gangrene, perforation followed by hydropneumothorax. Death.

4. F. Taylor (in a discussion on a case of Wast's at the Clin. Soc.; report from *Brit. Med. Jour.*, Dec. 22nd 1883): Acute pneumonia followed by pneumothorax with some effusion; air gradually absorbed. Patient remained well for 12 months, then phthisis followed hæmoptysis. "It became a question whether the pneumothorax had been set up by the pneumonia or whether it was a result of the individual's phthisical tendency."

5. Oldridge (*Brit. Med. Jour.*, Dec. 25th, 1915): Man, aged 40, seen Oct. 6th, diagnosis pneumonia, 10 hours later more urgent symptoms; dyspnœa and cyanosis. Symptoms of shock. Right pneumothorax present; displacement of heart (?). No pleural effusion; no tubercle bacilli found. Bed 10 days; return to work Nov. 4th—i.e., within one month.

6. S. Matthews (*Practitioner*, July, 1918): Measles; whooping-cough; pneumonia; pneumothorax; recovery. Girl, aged 7. Measles, Jan. 1st; apparently well and downstairs Jan. 20th; whooping-cough Jan. 31st; broncho-pneumonia Feb. 10th. On March 10th, after coughing, sudden access of pain left lower back of chest. Pneumothorax diagnosed. March 11th: Apex beat in right axillary line. April 14th: Physical signs of pneumothorax gone. Apex normal site. No effusion. No T.B.

To these may be added (7, 8) two known cases (one fatal) in the London Hospital in a period of about ten years and another fatal case (9) in the Middlesex Hospital.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL.—The two Goldsmid Entrance Exhibitions, offered annually for competition in September, were awarded this year to H. Spibey, Cambridge University, and Miss J. K. Gatty, London School of Medicine for Women and King's College, London.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Presidential Address.—Demonstration on Degeneration in Art, Science, and Literature.

A MEETING of this society was held on Oct. 14th, when the incoming President, Major A. F. VOELCKER, R.A.M.C.(T.), delivered his presidential address, in which he considered some ways in which the society could contribute towards the regeneration of the profession. No man could be satisfied with the position which our profession now occupied either in the eyes of the public or as a factor in the general commonweal, and he thought we had ourselves very largely to thank for this want of recognition. Our services were not understood, and consequently not appreciated, our readiness to work without remuneration was exploited, and in matters where professional knowledge was essential we were not consulted or were inadequately represented. The medical profession had allowed, and was allowing, itself to be exploited by almost every branch of social reform. The time was surely at hand when matters which affected the health and with it the morals of the community should be dealt with primarily by our profession, whilst the means and machinery for carrying out such measures might be left to the politician and social worker. In the regenerated medical profession he would urge the Fellows of the Society to be prepared to take their part as leaders in the fields of activity concerned.

Ministry of Health.

We were promised in our regenerated medical world that the health of the community, which had been up to now no one's concern in particular, though the burden had been on medical shoulders, should be the special care of a Ministry of Health. The creation of such an office would, he trusted, be the means of coördinating much of the work which was being undertaken by individuals both within and without the profession, and so preventing overlapping and redundant activities, and might even secure for our profession a recognition of the value of the advice given and the work which was constantly being done by us for the welfare of the community. At the present time the State by certain of its departments did give us invaluable help in dealing with some of the problems of infectious diseases, sanitation, and the inspection and control of food and drink, but even in these matters it must be confessed that we did not all see eye to eye with the official mind and that a Ministry of Health might possibly prove a King Stork in place of our present King Log. A Ministry of Health implied a Minister of Health, and it would be "a consummation devoutly to be wished" should such a Minister be a man (or should he say super-man) appointed by His Majesty after *election* by the qualified medical practitioners of the United Kingdom. We had lately been urged to secure the return of medical men to Parliament, but whilst recognising the excellent service such men had rendered in Parliament, could we seriously say that even a Fifth or Medical Party in Parliament would add to its utility, however much it might contribute to the diversity of the division lists? It had always seemed to him that the less medical men had to do with professional politics the better. We must be prepared for a Ministry of Health and must see to it that it was given loyal support in everything which made for the health of the community, and that the Minister was the selection of the profession and not of party.

Specialism in Medicine.

A Ministry of Health could not ensure health. The personal factor in medicine would ever be the moving power, and we ourselves must take our individual part in the practice and inculcation of the moral virtues of temperance, patience, charity, and sympathy. One of the questions in the near future would be that of the place of specialism. By many specialism was held to be the crowning mercy of medicine, but there were others who would urge that specialism was an overgrowth, and as such needed repression. There was no doubt that the public were obsessed with the glamour of specialism. If we thought of it we should recognise that in this matter of specialism it was the public and not the profession which created and supported the specialist, and he urged that this

was not desirable. In a regenerated condition of medicine might we not hope that specialists would be those who by their work and ability had won the confidence of the medical profession, and that the practice of specialists would flow to them through the channel of the practitioner and not through the press or the public. In the new earth (he dared not say new heaven and new earth) of medicine we must beware lest specialism be allowed to occupy too prominent a place. There would always be the need for specialism, but the specialist must follow and not precede the generalist. It would be one of the dangers of a State-controlled medicine, should that come, that the popular clamour for specialism might lead to the multiplication of special hospitals or special departments in hospitals and that the coming race of medical practitioners would be lamentably deficient in general knowledge.

A State Medical Service.

The question of the creation of a State Medical Service was one which was certain in the immediate future to claim the serious attention of our profession: for years we had seen it coming, though few had leaped for joy at the prospect. Financial burdens, due largely to the increased cost of treatment and maintenance, though not to the payment of the medical men, had compelled the managing bodies of our hospitals to realise that some change must take place in the financial resources of our hospitals if these were to carry on their work efficiently. It was felt by many that the work done was for the good of the State, and that, consequently, the State should pay for the work for which certain sums of money were voted annually by Parliament. The State, through such agencies as the Local Government Board, the county councils, the Universities, and the Board of Education, already granted financial aid to our profession, in order to enable provisions of public health legislation to be carried out, and with the gilding came the pill in the form of control. We were reminded that there were sums of money voted by Parliament and contributed by the taxpayer, which were available in the form of grants, and that if we did not choose to take them there were other bodies who would, and who would be enabled to compete with us under more favourable financial conditions, and—what was much more serious for our hospitals and for medical education—would be able to divert from us the material which we valued, both for its scientific and educational as well as for its humanitarian interests. We were, perhaps unnecessarily, reminded of the fact that in hospital work we received nothing for the time and labour we devoted to the treatment of the patients, and little, nothing, or even less than nothing, for the education of the future medical practitioners, and we were told that State control of hospitals would do away with this anomaly. The bait was tempting, but it was possible to pay too dearly for financial relief. Apart from hospital work it was urged in favour of a State service that when such a system was established every medical man would be able to rely on securing a living wage in return for which he should render medical service to the individual and to the community. Undoubtedly this would relieve many a hard-worked doctor of the wearing anxiety arising from the uncertainty of practice, but the object of State service should not be to secure a definite benefit for the doctor unless a corresponding benefit accrued to the patient or the community. As long as medical men were content to work for such low fees as obtained in certain practices they would not even deserve the respect and consideration paid to those who, in their respective fields of labour, demanded a minimum wage and restrictions of hours of labour. The low fees of which he had spoken were either grossly disproportionate to the services rendered, or the services rendered were not such as a highly trained and honourable profession could justify. The question of fees was a difficult one to tackle, but he trusted that in a regenerated state of our profession a juster arrangement of fees, both in the direction of raising the low fees and in mitigating the high fees, would be brought about, and that our licensing bodies would not allow the low scale of fees at present ruling in some practices.

Criticism of State Control.

The prevention of illness might be regarded as a duty of the State, and much had already been done by the State in the direction of prevention and treatment, but none of us could say that this duty was carried out efficiently. The outbreak of the numerous centres of medico-social activity such as health centres, infant-welfare centres, after-care associations, which were the creation of non-official bodies, testified to the inadequate manner in which at present the State played its part in protecting and furthering the welfare of the citizen. Some of us felt that it would be an evil day when the State by its medical service undertook the care of the health of the individual. The profession of medicine was so eminently human and the services so personal that it might be feared that as no man could serve two masters, so no medical man could serve both the State and the patient simultaneously. Was it not possible that a State service might destroy in its officials that energy and interest which were such important factors in the attainment of success in private practice? Promotion in a State service, if it became merely a matter of seniority, would cease to be striven for, and be merely waited for, and, if made the reward of real or imagined merit, might lead to intrigue and abuse. Our experience of State control as a stimulus to originality and endeavour had not been so convincing as to its advantages as to make us enthusiastic on its behalf, and although the splendid efficiency of our naval and military medical services during the war might be advanced as evidence of the value of a State service, we must remember that the temporary incorporation of civilian practitioners into these previously State-restricted services might be the explanation of the strikingly brilliant achievements of our medical services in this war. Advancement by merit in a State service would be a very questionable method of procedure.

Concluding Remarks.

He hoped that the medical profession would see to it that the remuneration of nurses whose work was so essential to the success of our treatment, and whose labours were so ungrudgingly given, should no longer be on a scale which was a scandal to our profession, for it was *we* who stood by and saw the miserably inadequate salaries paid both in hospitals and in private to the nursing profession. In his opinion, a woman who took up nursing took ten years off her life. After training three or four years she was then, worked out, able to earn a wage which a parlourmaid would scorn. During her training she was housed and fed, worked hard, and got possibly £12 in her first, £18 in her second, and £24 in her third year. Out of this she had to clothe herself and provide for a holiday and any recreations. For her there was no 8-hours day, any more than there was for us.

This society was founded "to give practitioners in medicine frequent opportunities of meeting together and conferring with each other concerning any difficult or common cases which might have occurred, or communicating any new discoveries which might have been made either at home or abroad." In his remarks on the occasion of the presentation of the first Fothergillian medal Lettsom defined the duties of the practitioner of medicine, surgery, and pharmacy, and observed on the importance of an institution which associated the respective members of each. Lettsom's interests were catholic, his activities ceaseless, and were all directed to the welfare of others.[1] He was an original member of the Humane Society; his voice was raised in favour of measures for preserving the health of prisoners in gaols and preventing the gaol distemper; he was instrumental in raising the Howard memorial; he was the first to send Jenner's vaccine to America; he instituted the Royal Sea-Bathing Infirmary at Margate; he founded a society for the cultivation of bees. His generosity and hospitality were proverbial. He was intensely human. He was not afraid to denounce quackery, as was seen in his ruthless exposure of the urine caster Myersbach. His energies were constructive as well as destructive, and while he was busy lashing the latest fashionable quack he was devising means for increasing the supply of bread by the addition of potato, and of encouraging the cultivation of the mangel wurzel as an additional source of food. It was on the labours of such a man that we were entered, and he thought that we could fairly claim that the success of this society had been its loyalty to the traditions of its founder.

Dr. T. B. HYSLOP gave a lantern demonstration illustrating the Oration on Degeneration in Art, Science, and Literature which was delivered last session. The demonstration consisted of pictures composed by various types of degenerates.

[1] THE LANCET, 1918, i., 70.

Reviews and Notices of Books.

Surgical Therapeutics and Operative Technique. By E. DOYEN. English edition, prepared by the Author in collaboration with H. SPENCER-BROWNE, M.B. Cantab., &c., Élève de l'Institut Pasteur; Physician to and Chef de Clinique de l'Institut Doyen. Vol. II., pp. 680. With 982 figures in the text. London: Baillière, Tindall, and Cox. 1918. Price 25*s.*

THIS is the second of the three volumes of which the English edition of Doyen's work is to consist. The first was reviewed in THE LANCET of June 9th, 1917 (p. 831). The volume now before us contains the continuation of the section dealing with operations on the head, as well as those concerned with the neck, thorax, upper and lower limbs. This volume is no less characteristic of the views and methods of the accomplished author than was its predecessor. The wealth of illustration is the most obvious feature. The drawings are all admirably clear and well executed, and a very large proportion of the figures are reproductions of photographs, as was to be expected in a treatise by one who had brought into such prominence the use of the camera and the kinematograph for the representation of surgical technique. Yet, admirable as they are, the number of illustrations might probably have been halved without detracting from the value of the book; thus in numerous instances a general sketch of the operation is followed by an enlarged view, where one or the other could well be dispensed with; and 11 figures are surely unnecessary to illustrate the exposure of lymph-glands by divulsion. Some of the figures, too, are nearly useless, and a few are really bad. Fig. 546, for example, shows a procedure which in many hands would be dangerous, and Fig. 553, as an illustration of a method of removing cancerous axillary lymph glands, cannot pass without criticism.

Perusal of the text suggests that the book is not one for students, but is likely to be of considerable use only for those who have already had a good deal of experience of clinical and operative surgery; for there is next to no discussion of methods other than those which the author employed, and the description of these is often very sketchy indeed. Many dangerous and some highly questionable operations are highly referred to. Very few would regard the operation figured on pp. 246–248 as justifiable. Some operations on the mediastinum, transpericardial anterior œsophagotomy, resection of the cervical sympathetic for the exophthalmos of Graves's disease, and the division of posterior nerve roots for the gastric crises of tabes occur as further and striking examples. Yet many other debatable questions of treatment, such as that of removal of cervical ribs or that of thyroidectomy for Graves's disease are far too shortly and easily disposed of. But it is good to see, in text and figures, the constant reference to topographical anatomy, which every operating surgeon ought to cultivate—a study, alas, too little fashionable at the present day. Good also is the assumption in this volume, as in the first, that every surgeon will strive to make himself an accomplished clinician; it may be for the surgeon rather than for the physician to decide the proper time and manner of surgical intervention. We see throughout evidence of the importance attached to speed in operating; even so, it is startling to read that the naso-pharyngeal tumour represented in Fig. 249 was removed in 15 seconds, or that denudation and resection of a rib need occupy only 5–10 seconds; and to see the method of transfixion in disarticulation at the hip recommended as superior to all slower methods—Liston himself could have done no better! The continued recommendation of the use of mycolysine and phymolase in septic and tubercular infections (of the former even for suppurative arthritis of large joints) is perhaps not surprising, but is likely, we imagine, to meet with little serious study in this country. Still less likely to find adherents are the views of the author on the causation of tumours and on the value of "anti-neoplastic vaccination" and thermic electro-coagulation. Indeed, preference for such methods of treatment may have been not unconnected with the nature of the operations here recommended for carcinoma of the tongue and of the breast, operations which most surgeons would regard as partial and inadequate.

The translation is not always beyond criticism. "I have removed a Flobert bullet of six millimetres from the body of the second cervical vertebra, which had been discharged within the mouth" is an example. There are fewer misprints than might have been expected in a work of this size. An index would have been valuable.

Medical Electricity. By H. LEWIS JONES, M.A., M.D., F.R.C.P., late Consulting Medical Officer to the Electrical Department, St. Bartholomew's Hospital. Revised and edited by LULLUM WOOD BATHURST, M.D. Lond., Physician in Charge of Electrotherapeutic Department, Royal Free Hospital, &c. London: H. K. Lewis. 1918. Pp. xvi. + 588. 15*s.* net.

THE task of revising a book such as that of the late Dr. Lewis Jones has called for judgment and discretion. The difficulty has been met in what we consider the wisest way—that of leaving the work in its original form—making only such alterations as are necessary to record the more recent advances in the subject. Consequently our remarks on the previous edition[1] apply in the main to the volume now before us. The then recent developments in our knowledge of the action and uses of electrical applications have been further extended, and the whole subject has received a tremendous impetus in studying the experience gained in dealing with the various disabilities following injury and disease in the Great War. These are reflected in the additions made by the editor, but with the vast amount of material becoming greater day by day, it is too soon to expect more than general inferences and conclusions. With regard to the use of condenser discharges for testing nerves and muscles, it appears that their value in accurately determining the degree of degeneration present has not come up to expectations, though the method constitutes a very substantial advance on the use of the coil and constant current. The extended uses of ionic medication and diathermy are enlarged upon, while the application of electrical currents through the medium of water kept in constant motion constitutes one of the most recent and useful methods. These and other matters have been brought up to date, so that the book remains the standard volume on medical electricity published in the United Kingdom. If we were to offer any criticism it would be to question the desirability of attempting to include a description of X ray appliances, their uses and applications, in a work of this kind. The subjects of medical electricity and radiology have developed so enormously in recent years that one can no longer be regarded as a sort of side issue to the other.

Quantitative Chemical Analysis. By FRANK CLOWES, D.Sc. Lond., and J. BERNARD COLEMAN, A.R.C.Sc., Dublin. Eleventh edition. London: J. and A. Churchill. 1918. Pp. 580. 12*s.* 6*d.* net.

APPRECIATION of this book on "Quantitative Chemical Analysis" is patent since it has now reached its eleventh edition, the first edition having been issued in 1891. The work has developed through this period from a manual for use in the laboratories of colleges and institutes to a volume of reference helpful to the consulting and analytical chemist. The chapters on water analysis, foods, oils, fats, and waxes, in addition to those on technical analyses, may be quoted in proof of this statement. The simple gravimetric estimations refer chiefly to the metals, and suggest really useful exercises. The technical analyses form a valuable feature of the work; it is a department of analytical practice which has evidently occupied considerable attention from the writers. Here are considered the methods of valuing ores for their metallic contents, alloys for the separation and estimation of their constituents, soda ash valuation, glass analysis, and other important directions of chemical assay. In a subsequent chapter a very useful section is given presenting the results of typical analyses made under the supervision of the authors in their laboratories. The book is thus thoroughly practical, and maintains its standard character, the manipulative details and the methods described being brought into line with modern developments.

[1] THE LANCET, June 21st, 1913.

FRENCH SUPPLEMENT TO THE LANCET*

Under the Editorial Direction of

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AND

Dr. CHARLES FLANDIN, D.S.O.,
MÉDECIN-MAJOR DE 2ME CLASSE; CHEF DE CLINIQUE À LA FACULTÉ DE PARIS.

FOR four years British Arms have fought on French soil for the cause of Justice and Progress. The coöperation of the Allies, at first exclusively military, has grown in scope, and has extended to realms apparently without the range of the war. An ENTENTE has been replaced by a UNION. And this Union should exist after the war, and should coöperate in all fields of human activity. Our doctors must not remain outside the great *rapprochement*, which should make one the soul of Britain and the soul of France.

British and French soldiers now make one Army, and this is because they have learned to understand each other. That the British and French doctors should become the exponents of one scientific and moral organisation, it is necessary that they should understand each other.

The aim of this Monthly Supplement in THE LANCET is to enable British doctors to understand the theories and the researches of French doctors.

We propose to issue, in more or less monthly form, a general review of some big medical subject and an original article dealing with a particular question. We shall obtain these contributions from authors whom we know to be especially qualified by their researches and work to set out ably the results actually achieved, as well as the trend of ideas in France. In this way we aspire to assist our British confrères to a fuller understanding of French medical movements, and we shall be happy to serve them by placing them in relation with those of our workers whose researches interest them specially. If this Supplement leads to mutual interpenetration of the two medical worlds we shall be amply repaid.

CH. ACHARD.
CH. FLANDIN.

WHAT THE WAR HAS TAUGHT US ABOUT TETANUS.

By LOUIS BAZY.

TETANUS is one of the diseases most anciently known. It has been besides much studied from the clinical as well as the bacteriological point of view, and everyone recalls the fine researches made in France by Roux and Vaillard, which gave us antitetanic serotherapy. It appeared, then, that the war was not able to teach us anything new. However, for the first time in our armies all the wounded received repeated doses of antitetanic serum. The result was that the common tetanus, that we were observing before the war, almost completely disappeared. In its place some cases have been observed, occurring in spite of the serum, and for this reason called by Borrel[1] post-seric tetanus. These forms present a particular physiognomy absolutely different from the classical form.

"There is, indeed, in question a tetanus of incomplete immunisation, tetanus which represents a fine example of those modified morbid types, with which preventive medicine is in course of endowing the natural history of the infectious maladies." (Widal.)

In short, it may be said that the war has brought us the following ideas:—1. Antitetanic preventive serotherapy is efficacious in the immense majority of cases. 2. When it acts incompletely it so modifies the course of tetanus that it has created new forms of the disease, unknown before its use was general. 3. The study of the checks to serotherapy ought to lead us (*a*) to use the serum in a more rational way; and (*b*) to know how to complete its action by that of an antitetanic vaccination. These are some points that it is proposed to consider.

I.—*Efficacy of Antitetanic Preventive Serotherapy.*

Before, and even during, the war some surgeons have discussed the efficacy of the preventive serotherapy of tetanus. It is, however, beyond discussion. Pierre Bazy,[2] who, the first, in 1914 proposed to make systematically in all the wounded an injection of antitetanic serum, has only observed 129 cases of tetanus in 10,896 wounded in hospital in the entrenched camp of Paris. These cases were almost entirely seen where the preventive injection was not habitually practised. Walther[3] received at the Val-de-Grâce 200 wounded Germans. The serum not being available at this moment in sufficient quantity, 100 cases only could receive an injection. One alone had tetanus, which appeared the day after admission—i.e., the prophylactic injection had been made too late. Of the other 100 who had not been injected 18 had tetanus.

Fredet,[4] at the moment of our first victory of the Marne, found in his hospital at Mary-sur-Marne 12 German wounded tended by a German medical man, who refused the antitetanic serum offered to him. Six of these wounded men died from tetanus, while Fredet, who employed serotherapy, did not see a single case of tetanus among his wounded, although they were more numerous. Many other statistics published in France demonstrate the efficacy of the preventive sero-therapy of tetanus, but only the most characteristic are here cited.

II.—*Post-seric Tetanus.*

However, the immunity conferred by the injections of serum is not absolute. As Lumière[5] says, it seems that the antitetanic serotherapy may be in default for two principal reasons:—

(*a*) When the quantity of toxin secreted at the seat of the wounds is considerable and out of proportion to the dose of serum injected. In this case the tetanus appears soon after the injection of the serum and in spite of it. Here we are dealing with an *early* post-seric tetanus.

(*b*) The immunity conferred by the preventive injection may be partly or totally exhausted at the very moment when at the site of the wounds, more or less old, cicatrised or not, tetanic sowings follow a surgical intervention or a traumatism. Either of these may liberate the spores shut up in the encysted foreign bodies. These are the *late* post-seric tetanus, and are much more frequent.

Considering the majority of the cases of tetanus observed in the present circumstances, the cases of post-seric tetanus constitute a family apart, possessing its special pathogenesis, its symptomatic picture, and, above all, its quite particular prognosis. Far from testifying to the insufficiency of the preventive serum, such cases give us, on the contrary, the most varied proofs of its efficacy. It is the presence of the antitoxin and its action which dominate the malady (Montais[6]). Everything comes down, in effect, to the struggle between the tetanic toxin and the antitoxin introduced

* The first of these Supplements appeared in THE LANCET on Sept. 21st, 1918, and comprised the following articles:—The Microbic Diversity of the Enteric Fevers, by Professor Achard; Post-Typhoid Atony of the Cæcum, by Maurice Loeper, Professor in the Faculty of Medicine and Physician to the Hospitals, Paris.

[1] Borrel: Comptes rendus de la Société de Biologie, 6 Mai, 1916.
[2] Pierre Bazy: Presse Médicale, 4 Février, 1915.
[3] W. Walther: Bulletin de l'Académie de Médecine, 29 Sept., 1914.
[4] Fredet: Société de Chirurgie, 20 Juin, 1917, p. 1338.
[5] Lumière: Annales de l'Institut Pasteur, Janvier, 1917, p. 19.
[6] Montais: Annales de l'Institut Pasteur, Juillet, 1916, p. 330.

by the serum. The post-seric tetanus is more attenuated and localised in proportion as the action of the antitoxin is more powerful. It is this action of the antitoxin which regulates at once the clinical signs and the prognosis of tetanus.

The experiments of Roux and Vaillard on the preventive power of the serum are well known. Guinea-pigs are injected with a dose of filtered tetanus culture lethal to the controls in 48 hours. The animals then receive, some immediately after injection of the toxin, others at intervals of 1–6 hours, a strong dose of very active an itetanic serum. In these conditions what do we see? The tetanus will show itself earlier and more intense in proportion as the preventive injection has been made later, and the prophylactic dose of serum must then be proportionate to the delay, and must also be administered by the most rapid routes of absorption, in the guinea-pig by intraperitoneal injection in preference.

Clinically, in man the same phenomena are to be observed, and the preventive injection of serum can be seen to modify completely the clinical course of tetanus. Thus it is very difficult to fix the clinical "physiognomy" of the tetanus, and we shall not endeavour to do this. Good descriptions will be found in the book of Courtois-Suffit and Giroux,[7] and especially in the very excellent works of Montais and of Lumière already cited. One of the most striking features is the inconstancy and variability of the symptoms of post-seric tetanus (Montais, Bérard, and Lumière). In ordinary tetanus, that occurring in subjects who have never received antitetanic serum, the toxin affects successively, in a constant order, all the parts of the nervous system, from the nerves of the region wounded to the bulbo-medullary centres.

"But in the injected subjects the pathogeny is quite special; the tetanus is the result of an incomplete seric protection. In these conditions the reaction of the higher centres can, from this fact, be incomplete, irregular, and incoördinate. Instead of yielding to the toxin with the habitual regularity of the classical tetanus, each of the centres has become free to react separately, in a variable and even inconstant manner." (Montais.)

The seric injection protects in general the higher centres, which in the ordinary tetanus are the last affected. Thus many cases of post-seric tetanus are localised to the wounded limb. Courtois-Suffit and Giroux have been able to say that in these conditions the tetanus was no longer a general but a local affection. We might name it a veritable *tetanic neuritis*. Apart from those characteristic symptoms which are essentially painful cramps, this form of tetanus can give rise, like all kinds of neuritis, to trophic troubles. Bérard, Lumière, and Dunet,[8] Sencert and Cornioley,[9] have described, in the course of evolution of late localised tetanus, osteoporosis which, under the influence of the tetanic contractures, resulted in the production of spontaneous fractures.

It has been orthodox to say up to now that tetanus respected the integrity of the intelligence. And in effect the tetanic toxin, following a progressively ascending course, affected successively the peripheral nervous extremities, the medulla spinalis, and then the bulb. In this way the tetanic patients died before the brain had been affected by the tetanic toxin. But now, owing to the serum, the bulbo-medullary centres can be preserved from the fatal lesions, and the tetanic poison is seen to reach the cerebral centres and to give rise to *accidents cérébraux*. Bérard and Lumière,[10] Lumière and Astier,[11] have described these mental disorders, which consist of hallucinations, delirium, agitation, and phobias, with nocturnal exacerbation.

We would not have described all these clinical particulars if it were not possible to draw from them important elements of *prognosis*. As the seric protection, which influences the course of the malady, has only a limited duration it can be remarked in the first place, with Bérard, that—

"the longer the interval between the preventive injection and the first signs of tetanus the more the symptomatology approaches the classical form of early tetanus, and the more serious becomes the prognosis."

It can be observed further that the tetanus will be grave in proportion as the preventive injection of the serum has more or less well protected the higher nervous centres. From this point of view, as has been well shown by Montais and Lumière, great attention must be paid to the presence or absence of *trismus*. In considering this single symptom three varieties of post-seric tetanus can be distinguished:—

(*a*) *Tetanus without trismus.*—In these cases the injected antitoxin has prevented the fixation of the microbic poison on the central nervous system, limiting its action to the motor nerves of the wounded limb. These cases of tetanus without trismus are much less grave than the other forms.

(*b*) *Tetanus with late trismus.*—The bulbo-medullary centres are only incompletely protected. Then is noted the appearance of a late or incomplete trismus accompanying the local contracture. The prognosis is here less favourable.

(*c*) *Tetanus with immediate trismus* [*trismus d'emblée*]—Here the protective effect of the serum is exhausted; the route has again become free for the penetration of the toxin, and the higher centres can be affected. These cases are almost always fatal.

To compare the relative gravity of these different forms I give some very eloquent statistics from Lumière:—

Post-seric tetanus—(*a*) without trismus; (*b*) with trismus delayed or attenuated; (*c*) with trismus *d'emblée*.
(*d*) Tetanus without preventive injection.

—	(*a*)	(*b*)	(*c*)	(*d*)	Total.
Number of cases	15	13	26	27	81
Cured	11	8	8	7	34
Died from tetanus	1	3	17	19	40
,, ,, intercurrent affections	3	2	1	1	7

III.—*Therapeutic Conclusions.*

The new ideas acquired on post-seric tetanus may serve to indicate rational therapeutic action in regard to curative and preventive treatment.

A. *Curative Treatment.*

In the preface, which he has contributed to the book of Courtois-Suffit and Giroux, Widal writes:—

"In its origin tetanus is only a simple infectious localisation at the level of a wound; but, on account of the elective action of the toxin secreted by its microbe, it is as a malady of the nervous system that it presents itself to us from its first manifestations. So, to combat it, a symptomatic medication should come to the aid of the pathogenic medication. In knowing how to alleviate the crises of painful contractures the medical man gives at periods to his patient the means of passing over the dangerous stage, and can thus conduct him to the period of cellular reparations—that is to say, to cure."

The pathogenic medication is the injection of antitetanic serum. Before the war nearly everybody admitted that the antitetanic serum had no curative virtue, in spite of some suggestive observations of massive serotherapy crowned with success.[12] Roux and Vaillard, although we are indebted to them for this brilliant discovery, concluded from their experiences that—

"When the first symptoms of tetanus appear the toxin elaborated in the focus of infection has reached the nervous centres, and these may be sufficiently affected for death to occur inevitably. Injected under the skin or into the peritoneum the antitoxin neutralises, indeed, the toxin in the circulation, but does not remedy the lesions produced, and can effect nothing against a poisoning already realised."

These ideas, which were applied to the cases of tetanus habitually observed at that time—cases which arose in subjects who had received no preventive infection—are no longer true for the cases of post-seric tetanus, which during this war are much more frequent. The evolution of these latter cases is slow and retarded, and the injections of antitetanic serum in large doses seem to exercise a happy influence on this evolution. Thus on the appearance of the first symptoms of tetanus there should be injected in two or three days 100–200 c.cm. of serum and even more. It must not be forgotten, in fact, that—

"If the antitoxin can no longer act on the toxin already fixed in the nervous elements, it can still act on the toxin that the tetanus bacilli,

[7] Courtois-Suffit et Giroux: **Les Formes Anomales du Tétanos**, Masson, éditeur, Collection Horizon.
[8] Bérard, Lumière, et Duret: **Bulletin Médical**, 5 Janvier, 1918.
[9] Sencert et Cornioley: **Société de Chirurgie**, 17 Avril, 1918, 742.
[10] Bérard et Lumière: **Académie de Médecine**, 18 Décembre, 1917.
[11] Lumière et Astier: **Société de Thérapeutique de Paris**, 10 Janvier, 1917.
[12] Ch. Achard: **Soc. Médic. des Hôpitaux**, 9 Février, 1912. Oulmont et Dumont: **Ibid.**, 19 Avril, 1912. J. Darier et Ch. Flandin: **Ibid.**, Novembre, 1912.

not destroyed, can continue to pour out at the level of the wound." (Widal.)

At the present time the curative action of antitetanic serum seems indisputable.

Route.—What route should be employed? The new trials which have been made in the course of this war are, above all based on the principle that tetanus being a nervous malady it is upon the nerves that it is necessary to act. The intracerebral route, supported by Roux and Borrel, has been almost abandoned. On the other hand, many surgeons much favour the intrarachidian route, but this seems of little practical use. Sicard has proposed paraneural injections, which are made at the junction of the limb with the trunk, and in the neighbourhood of the great nerves. Appert and Lhermitte practise epidural injection in the sacral canal, effecting thus a pararadicular injection. Walther and Jousset[13] in four cases made deep injections of serum of 20 to 30 c.cm. around the pharynx in the submaxillary region; they have thus alleviated the trismus and dysphagia. But of all the methods it seems that one alone may be practically sufficient and free from all criticism—that is the subcutaneous method.

Symptomatic medication.—But pathogenic medication, powerful though it is, has need of being completed by symptomatic medication, which is directed to the nervous phenomena; indeed, these remedies were proposed before the war. I shall not enumerate them, but will only point out two very interesting methods, due to Bérard and Lumière. These authors direct at Lyons a special tetanus treatment centre, and they have thus been able to acquire a very large experience.

Lumière,[14] having studied during several years the action of oxydising agents on the tetanic toxin, found that the alkaline persulphates possessed in the highest degree the power of destroying the tetanic poisons. He then treated the tetanic patients under his care by intravenous injections of 20 c.cm. of a pure and neutral solution (5 per cent.) of persulphate of soda, performed once or twice a day. He has obtained excellent results, which have been confirmed in particular by W. du Bouchet[15] and by Jacob. I also have been able to note the good effects of this method of medication.

Bérard and Lumière,[16] having on the other hand observed that the permanent contracture of the wounded limb is the most constant symptom of post-seric tetanus, and that this contracture, when the wound is accompanied by fracture, has the serious result of nullifying the reduction of the fracture, had the idea of combating it by *regional anæsthesia*. They have employed to this end a solution of novocaine of 1·5 per cent., with the addition of a drop of adrenalin, 1 in 1000. The injections have been made at the level of the brachial plexus for the upper limb, at the point of emergence of the sciatic for the lower limb, and in the vicinity of the nerve trunks controlling the groups of the contractured muscles. This treatment has given in all cases most encouraging results.

But it is better to prevent than to have to combat an infection so redoubtable as tetanus.

B. *Preventive Treatment.*

In order to be able to meet all the circumstances it is necessary to know alike how to prevent the early post-seric tetanus which supervenes when the prophylactic injection has not been powerful enough, and the late post-seric tetanus which appears when the prophylactic injection is too remote.

(*a*) *Prevention of early post-seric tetanus.*—Tetanus can develop soon after an injection of antitetanic serum made at the appropriate time, perhaps because there exists, together with the tetanus bacillus, paratetanus bacilli (this is a question which requires to be determined), but above all because at the level of a wound there is a superabundant secretion of toxin out of proportion to the dose of preventive serum injected. The superabundant secretion of toxin is produced especially in the freely suppurating wound, badly drained, and the first conclusion to be drawn is that one of the best ways of avoiding tetanus is to carry out early a complete surgical intervention. The second conclusion is that it is not necessary to hesitate in cases of serious wounds—above all, in the wounds of the lower limb, and quite specially in the cold-bites of the feet which have led during this war to such a large number of cases of tetanus—to make at once an injection of 20 or even 30 c.cm. of antitetanic serum. Repetition of the injection of serum is indicated every eight days for one month after receipt of the wound when dealing with infected wounds. This wise prophylactic measure is, however, insufficient. The immunity persisting for only about 15 days after the last injection of serum, it results from this that at the end of 45 days the patients are no longer protected by the previous inoculations. Now, tetanus has often been observed to appear more than 50 days after the wound. How are these late cases of tetanus to be prevented?

(*b*) *Prevention of late post-seric tetanus.*—The late post-seric tetanus supervenes after a delay of from one month to four months, and even more, after the wound—for example, 212 days in a case of Bérard and Lumière. To what are these cases of late tetanus due? In wounds which cicatrise slowly and are infected the spores of tetanus remain in a latent state as long as they are bathed by organic fluids containing the antitoxin of the serum. But when this last is exhausted by lapse of time microbic vegetation can take place and tetanus appears. In the cicatrised wounds the spores of tetanus can exist on the surface of projectiles. Bérard and Lumière have found them in three cases out of four.[17] They can also be found in the depth of old cicatrices, or even at times may come from the intestine of the wounded men. Any traumatism, and more particularly a surgical traumatism, operation, massage, mobilisation, suffices to set free the infection.

From this comes the rule laid down by Pierre Bazy, Bérard and Lumière, and a large number of French surgeons: always to practise a fresh injection of serum at the moment of the complementary surgical intervention which may liberate the infecting germs. However, this mode of action is not always sufficient. In certain wounds, which have a slow evolution or still contain foreign bodies, it can be observed that the tetanus constitutes a *permanent menace*. The question arises whether by means of injections of serum this permanent menace can be met. We have answered this question. M. Vallée and myself, in proposing *antitetanic vaccination*.[18] It is not logical, in fact, to seek to obtain durable effects from the serum, the action of which is always ephemeral. If it is desired to put rapidly, though for a short period, the wounded men in safety from tetanus it is necessary to supply them with the antibodies, already formed and immediately utilisable, that the serum represents. If, on the contrary, a prolonged menace of tetanus is feared the medical man can protect his patients by the slow but durable action of a vaccine.

Inspired by the work of Roux and Vaillard, we have employed as vaccine an iodised toxin, the same as is used at the Institut Pasteur to prepare the horses providing serum. The power of the toxin which we have employed is such that 1/10.000 c.cm. sufficed to kill a guinea-pig of 400 g. On mixing this toxin with an iodised solution (iodine 1 g., iodide of potassium 2 g., distilled water 200 g.), in the proportion of two-thirds of toxin to one-third of iodised solution, there is obtained a liquid neutral for the organism, but yet capable of vaccinating it. At first—acting, as can well be supposed, with the greatest prudence—we injected the wounded men a first time with 1 c.cm. of this iodised toxin, a second time with 2 c.cm., and a third time with 5 c.cm. of toxin mixed with 2 c cm. of iodised solution. Since then we have much increased the doses. There can easily be injected the first time 4 c.cm. of iodised toxin, the second time 8 c.cm., and the third time 12 c.cm. It is possible to increase further the number and dose of the vaccinal injections, which are remarkably well borne and provoke neither local nor general phenomena.

We shall pursue, M. Vallée and myself, further researches on this antitetanic vaccination. Up to the present the results which it has given us are so satisfactory that we can recommend it to our British friends in the hope that it will render them service. With the serum and with the vaccination it seems that we are now better armed against tetanus, and I desire to reproduce the conclusions that I stated at the

[13] Walther et Jousset: Académie de Médecine, 29 septembre, 1914.
[14] Lumière: Sur l'Emploi du Persulfate de Soude dans le Traitement du Tétanos, Lyon chirurgical, Octobre, 1915
[15] W. du Bouchet: Société de Chirurgie, 18 Avril, 1917, p. 924.
[16] Bérard et Lumière: Académie de Médecine, 13 Novembre, 1917.
[17] Bérard et Lumière: Académie des Sciences, 9 Octobre, 1916.
[18] Henri Vallée et Louis Bazy: Vaccination Active contre le Tétanos, Académie des Sciences, 25 Juin, 1917, et Société de Chirurgie, 27 Juin, 1917, p. 1445.

Société de Chirurgie in June, 1917, so as to define precisely the indications of the two methods.

"Immediately after the wound practise without delay an injection of antitetanic serum, which you will repeat in case of need at intervals of some days, so as to guard against immediate accidents. Then, favoured by the immunity thus conferred on the wounded man, it will be legitimate treatment to render his resistance tenacious by submitting him to vaccination. It is recommended that this be carried out only five days at the soonest after the last seric injection, so as to avoid part of the toxin being absorbed by the antitoxin of the serum and thus becoming unsuitable to ensure the immunising reaction."

Such are the new ideas that the war has brought forth on tetanus.

TETANUS CONSECUTIVE TO SUPERFICIAL WOUNDS AND TO TRENCH FOOT:

TREATMENT AND PREVENTION.

BY PROFESSOR RAYMOND,

MÉDECIN PRINCIPAL DE 2e CLASSE.

I SHALL confine myself in this short note to giving the result of my personal clinical experience on the two following particular points: (1) Treatment of tetanus consecutive to superficial wounds; and (2) tetanus in trench foot.

Treatment of Tetanus Following Superficial Wounds.

I have watched two cases of tetanus consecutive to superficial wounds.

1. The first case was that of a soldier who had a slight wound in the region of the back caused by a small piece of shell. The wound was so slight that the man did not seek treatment, but some days later presented himself because of trismus. On admission to hospital he presented a typical tetanus with generalised contractures, trismus, dysphagia, convulsive crises, elevated temperature, &c. The treatment consisted of: (1) Excision of the little wound as done for malignant tumour; a small metal fragment was found in the excised tissues. (2) Serotherapy in large doses; 100 c.cm of serum each day injected hypodermically; this treatment was continued for a fortnight. Gradually the crises became less frequent, the trismus, the dysphagia, and the contractures subsided. Towards the tenth day, as there was remission of temperature and the urine contained a large quantity of albumin, it was decided to discontinue the injection of serum. Immediately the temperature rose again, with aggravation of the symptoms. The seric treatment was again resorted to, whereupon the temperature fell, the symptoms disappeared, and cure became definite without fresh incident or complication.

2. The second case is analogous. A soldier received a very slight wound of the face in the region of the inferior maxilla. At first he did not seek treatment, but was obliged to do so, some days after his wound, for facial paralysis. He entered hospital with this diagnosis. A careful examination revealed slight crises of trismus on percussion of the inferior maxilla. Some hours later the complete symptomatology of tetanus appeared. The treatment consisted, as in the first case, of excision of the small wound, carried out as for a tumour, and intensive serotherapy. To start with, some intra-rachidian injections were made, but subcutaneous injection in doses of 100 c.cm. each day constituted the basis of the treatment. The affection evolved as a grave form; there were very disquieting bulbar and cerebral symptoms. Then by degrees cure took place. The only accident was an eschar of the thigh consecutive to the injections of the serum.

In these two cases we are dealing with a tetanus consecutive to a very superficial wound, so superficial that the wounded man did not present himself for treatment, and consequently did not receive preventive injection of antitetanic serum. The treatment has been based on:—

1. Excision of the wound. This was carried out as in the case of a malignant tumour, by circumscribing very widely the whole region of the wound. The object was to remove the tetanigenic germs with the tissues which contained them, without causing the penetration, by way of the operation wound, of tetanic toxin into the circulation. The excision has had in these cases, in our opinion, a preponderant action by the suppression of the focus of permanent production of poison.

2. The excision of the wound having suppressed all new access of tetanic toxin, it only remained to combat the toxin already fixed in the tissues. Here serotherapy in high doses has given excellent results. In the first case in particular its efficacy has been shown; on stopping the therapy a disquieting recrudescence of the symptoms immediately followed. The doses employed have been 100 c.cm. of serum each day by the subcutaneous route. The injections have been continued until the infection was overcome—that is to say, from 10 to 15 days. We have employed French or American serum; in the former the dosage is based on the cubic centimetre, and in the latter on the antitoxic unit. 10 c.cm. of French serum of the Institut Pasteur correspond to 1500 antitoxic units of American serum.

Tetanus in Trench Foot.

The affection called "trench foot" or "*gelure* of the feet" is very often accompanied by tetanus. This fact has been recorded by former authors, at the time of the wars of the First Empire and of the Crimea, but it has been lost sight of, so that the appearance of tetanus in trench foot has been a veritable surprise in the present war. Since our first studies with Parisot we have recorded the frequency and the gravity of this complication. We have observed especially two cases in the following conditions.

We had under treatment in our service 50 native soldiers, admitted the same day for a grave form of trench foot, with massive œdema of the legs, very extensive eschars, and profound infection of the tissues. To these local symptoms were joined an elevated temperature and the signs of general septicæmia that we find associated with this malady. All the patients had received a prophylactic injection of 10 c.cm. of antitetanic serum.

On the eleventh day one of the patients presented acute symptoms of tetanus and died in 35 hours. We administered at once a fresh injection of 10 c.cm. of antitetanic serum to all the patients, but this did not prevent another man having tetanus as grave and rapid as the preceding and leading to death in 48 hours. We then made an injection of 30 c.cm. of antitetanic serum in all the other patients, and we had no further cases of tetanus.

Numerous observers have recorded analogous facts, so that it can be said that trench foot is, above all, the tetanigenic affection, more so even than the wounds in war. This is very easily understood if we think of all the contaminations which are found on the feet of those who have stayed in the dirty water of the trenches, of the diminution of resistance of the tissues brought about by this stagnation, and, finally, of the microbic flora that have been described in this affection.

Tetanus in trench foot is always grave, and almost all the cases have been fatal. If now, in accordance with what has always been our view—a view supported by numerous authors—the medical man avoids systematic amputation of the feet, it is of importance, so as to guard against the formidable complication of tetanus, to comply with the following rules: 1. To make in all cases a prophylactic injection, as early as possible, of 20 c.cm. of antitetanic serum. 2. To repeat this injection, in all the cases where there has been loss of substance of the integuments, phlyctenæ or eschar, at the end of eight days. 3. Not to fear, in the grave forms with extensive gangrene, infective manifestations, to increase the doses and inject 30 c.cm. and more. 4. To make an injection of 10 c.cm. at the least every eight days as long as there exist sphacelated tissues, necrosed or suppurating zones—in short, as long as the wound is not in the way of definite cicatrisation. 5. It is well not to allow an interval of more than eight days between each injection of antitetanic serum, alike to assure the continuity of the antitoxic treatment and to avoid seric or anaphylactic accidents.

Thanks to this practice we have had, Parisot and myself, only the two cases of tetanus just related among several hundred serious cases treated in our centre.

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THE LANCET.

LONDON: SATURDAY, OCTOBER 19, 1918.

Pratt and Others v. The British Medical Association.

IN the King's Bench Division during the last fortnight of July there was heard at great length before Mr. Justice MCCARDIE an action by Dr. ERNEST CAMDEN PRATT, Dr. DAVID HOLMES, Dr. ANDREW ST. LAWRANCE-BURKE, and Dr. CHARLES HODGES CAIRNS (deceased) against the British Medical Association and certain members of the Coventry Division of the British Medical Association. The plaintiffs, who were at the time of the institution of the action medical officers of the Coventry Provident Dispensary, claimed damages for conspiracy and injury in their profession and for libel and slander. The opening addresses of counsel, both for plaintiffs and defendants, as well as the more pertinent evidence tendered on each side, were published in the medico-legal columns of the *British Medical Journal* on August 3rd and 17th, and, abbreviated although these reports are, the complicated arguments employed emerge well from them. In fact, this report was a remarkably accurate account of the principal features of the case. The exact definitions, and the legal and popular meaning attached to such terms as "conspiracy," "malice," and "professional honour," were debated; the fundamental divisions between free hospitals (taken as the type of completely philanthropic institutions) and provident dispensaries (where the work is not of a purely charitable nature) came under discussion; the powers and scope of the British Medical Association as opposed to those of a trade union were seen to be in question; the methods in which those powers were employed were described; and no one was surprised on the last day of the protracted hearing when Mr. Justice MCCARDIE, who had throughout displayed the greatest anxiety to make a complicated story clear, reserved his judgment in view of the legal importance of the case. With the consent of the plaintiffs the judge was sitting without a jury, and he explained frankly that he felt the onus upon him very heavy, inasmuch as not only the individual rights of persons alleged to have suffered were at issue, but questions of the first moment to the medical profession and the community.

Mr. Justice MCCARDIE delivered his lengthy judgment on Tuesday last, concluding with a verdict on the principal counts for the plaintiffs. Our readers are probably familiar with the main facts of the story, which is far too long a one to be treated in any categorical manner, although his lordship, in the course of his judgment, gave a very effective résumé of the salient facts. For very many years the conduct of the Coventry Provident Dispensary was considered unsatisfactory by the local medical men. The professional point of view was set out in articles which appeared in our columns, and which took note of the ancient history, but for the purposes of the case, as decided against the British Medical Association, it is not necessary to go further back than 1906. This year marked the high level of the success of the Dispensary, and in this year the opposition of the Association took formal shape, when the following three causes of complaint against the institution were formulated: That the canvassing of the public for patients through a collector, paid on commission, was professionally improper; that the management was too exclusively in lay hands; and that no proper wage limit was imposed upon the subscribers for medical aid, and that such limit was not retrospective. The result was a conference between the local medical profession and the managers of the Dispensary, when the first medical point was conceded, a salaried collector being substituted for one paid on commission; but no change of constitution was considered in respect of the other two points. Thereupon five of the medical staff of the Coventry Dispensary resigned, and in 1907 a medical club was started under medical auspices, the British Medical Association deciding that members of the Association ought not to take medical office at the Dispensary. Had the Association been able to prevent the Dispensary from obtaining medical service, at any rate until its house was set entirely in order, contract practice in Coventry would have taken the shape which most of the profession who had thought upon the matter considered to be best both in the public and professional interest; but the Dispensary was able to find medical officers, despite the representations of the Association. Whereupon the Coventry Division of the British Medical Association, supported by their central organisation, proceeded to make things professionally disagreeable for practitioners who held office at the Dispensary. Members of the Association were forbidden to enter into professional relations with the medical officers of the Dispensary, either in ordinary or consultant capacity, and the ostracism was extended, as far as might be, to practitioners who were not members of the Association. The action of the four plaintiffs against the British Medical Association as an organisation, and against certain local members of the Association, arose out of the situation in which they found themselves as medical officers to the Coventry Dispensary while under professional boycott. The legal proceedings commenced long ago, and one of the plaintiffs is dead; nor were the other three in wholly comparable situations in bringing their joint action, but substantially their grounds of complaint were identical. In the main, what Mr. Justice MCCARDIE had to determine was whether the ostracism of the medical officers of the Coventry Provident Dispensary, admitted by the defendants, was lawful.

Mr. Justice MCCARDIE found for the plaintiffs on all counts, holding the coercive action of the British Medical Association illegal. He alluded to the disciplinary measures of the Association as an improper assumption of power; and by describing the penal

powers of the General Medical Council with detailed accuracy he intended, we must suppose, to suggest that those powers are sufficient to meet all cases of improper medical conduct so far as the public is affected. In the awarding of damages he laid stress upon the blameless professional conduct of the plaintiffs, and was influenced by his reluctant conclusion that malice had played a part in the attitude of the Association towards them. He held that the Association, to whose good work and high position he more than occasionally paid tribute, had been, in many of the circumstances under consideration, impelled by mixed motives—partly by a real desire to uphold the honour and interests of the medical profession, but partly by an intention to punish defaulters from the standards erected by the Association. Mr. Justice MCCARDIE'S verdict had been very generally anticipated.

Wounds of Joints.

DURING the four years of the grim struggle now drawing to its close, in which the human body has been the principal target, joints have been wounded by rifle- or shell-fire in about 1 in 25 of the direct hits recorded. Presumably the joints occupy about this proportion of the whole exposed surface of the body. Surgeons have, in consequence, gained a large experience of the various methods of dealing with joint wounds, and initial wide differences of opinion are now giving place to a remarkable degree of agreement on the general principles of treatment. We have already published a number of articles on the subject and are glad to include in our present issue the second part of a paper by Captain J. CAMPBELL, which gives a useful summary of these principles. It is not long since joint injuries were regarded with something like dismay. Grave indeed they are, but we have learned that articular surfaces have no small power of self-protection, which does much to prevent and to limit the evil effects even of the severest injuries and infections. Synovial membrane may be trusted to overcome bacterial invasion, when not of overpowering virulence, provided that exit is afforded to the exudate which the membrane pours forth. Moreover, in the face of any agent causing inflammation the synovial membrane readily forms adhesions, and so rapidly are these produced that, in the course of a few hours, openings through which sepsis might enter are completely shut off, while sepsis which has already invaded the joint is localised within narrow limits. The properties of the tissues forming the articular ends of the bones have also important bearings. Articular cartilage is avascular, yet it does not readily undergo erosion even in the presence of sepsis unless subjected at the same time to pressure. When pressure is exerted sepsis leads rapidly to erosion. Hence, so long as sepsis is present in a joint it is logical to prevent pressure on the articular cartilage by the judicious use of extension. The bone underlying the articular cartilage receives no vessels from the articular surface, with the result that if any portion has its lateral blood-supply cut off, this portion of bone must die, forming a sequestrum which will then greatly facilitate the spread of any sepsis present. These are some of the fundamental considerations on the application of which depends the successful treatment of joint wounds.

Other points for deliberation have reference to time and circumstance. It is clear that when cases of joint injury are seen early an immediate operation is indicated provided that the patient is in a condition to stand the shock. The operation would then consist in the removal of any foreign body present and of any loose portions of bone, the excision of the wound, and its complete closure. In a large proportion of the cases so treated the result leaves nothing to be wished. If, on the other hand, a period of 24 or 48 hours has elapsed since the injury was inflicted, and if the joint meanwhile has been well immobilised and efficient extension applied, there can be no object in interfering, while all appears to be going well. Information obtained by X ray examination may now be of great value in deciding what shall be done or left undone, and the report on the character of invading organisms will also have its influence on the choice of treatment. The general principles for conservative treatment have already been indicated by anatomical considerations. First and foremost, the joint must be kept absolutely fixed, for movement diminishes relatively the chances of recovery; at the same time, the articular surfaces must be prevented by suitable extension from rubbing together. The number of splints introduced for this purpose during the war is legion, many of them both simple and ingenious, but the fact remains that for either limb some modification of Thomas's original knee-splint appears to serve every purpose. Several patterns of this splint are now made which allow of an easy application of extension, and practical experience has already shown their efficiency. In regard to operative procedures, excision of the joint should be reserved for early cases where the ends of the bones are much injured, but where a prospect remains for obtaining either a strong and fixed joint, or one in which some movement is retained; the amount of bone removed will vary accordingly. In late cases benefit will rarely be derived from excision, for severe sepsis adds a great danger to carrying it out. Many cases unfortunately still remain in which the injury is too severe, or the strength of the patient is too much impaired to allow of any conservative measure whatsoever, and in these amputation provides the final alternative.

Debatable points of technique there still are. The use of antiseptics in the joint is questioned by some, although many who have had experience with Professor RUTHERFORD MORISON'S bismuth and iodoform paste speak in the highest terms of its value. In early cases it certainly does marvels, but its employment when sepsis is well established is more doubtful. Captain CAMPBELL has something to say regarding the quantity employed, which should not be sufficient to constitute in itself a foreign body. In septic cases CARREL'S method has its special value, and the employment of irrigating tubes may enable secondary suture of

the wound to be performed later. Much depends on which is the actual joint involved. In respect of response to treatment no two joints are alike. In a large joint, such as the knee, drainage by lateral incisions is of little value; and where drainage has to be employed at all, openings should be made through the posterior wall of the joint. In the hip, the presence of the head of the femur, cut off from its blood-supply and surrounded by sepsis, is a definite hindrance to recovery, and in the opinion of many excision is imperative. While so much is firmly established, much still remains to be learned about the treatment of gunshot wounds of joints, but what has already been learned will be applied to the various injuries of civil life, with a vast improvement of joint surgery.

Annotations.

"Ne quid nimis."

THE CHANGES IN UNIFORM AND TITLES IN THE MEDICAL BRANCH OF THE NAVY.

THESE changes, recently introduced, may be of a far-reaching character; they must be regarded as almost revolutionary in such a conservative service as the Navy. Therefore all the more credit is due to the present Board of the Admiralty for broad-mindedness in facing the problem of making public the conviction that all the different branches of the Navy are limbs of the same grand tree. The changes are a timely recognition on the part of the Admiralty that in a modern man-o'-war the hazards are shared by all, and the casualty lists leave no doubt that the medical personnel has borne its full share of recent perils. Up till now the uniform of officers in the Royal Navy has been of two types—viz., that worn by the executive and engineers, and that by the other branches, including the medical service, the paymasters, and naval instructors. The former was distinguished by a curl surmounting the upper ring of gold lace on the cuff and by oak leaves instead of a plain gold band on the cap. All now wear the same uniform. The coloured cloth (red in the case of the medical officers) between the gold stripes will persist, and is so distinctive that none but the colour-blind can fail to recognise at a glance the officers of the medical service. Where two different types of uniform were worn by officers belonging to the same service invidious comparisons were bound to exist. The changes should result in a closer union between all the different branches of the service, where uniform means so much. The new titles are of a compound nature, and comparing them with the old we have—

Old.	*New.*
Surgeon Probationer, R.N.V.R.	Surgeon Sub-Lieutenant, R.N.V.R.
Surgeon.	Surgeon Lieutenant.
Staff Surgeon.	Surgeon Lieutenant Commander.
Fleet Surgeon.	Surgeon Commander.
Deputy Surgeon-General.	Surgeon Captain.
Surgeon-General.	Surgeon Rear-Admiral.

We are not much in favour of compound titles, but we recognise the good intentions underlying the change. There are other questions in the Naval Medical Service which require attention, but the changes in uniform and titles are an earnest of intended procedure which should influence young doctors in looking to the Navy for a future career.

UNIVERSAL ANÆSTHESIA.

THE remarkable case described in another column by Captain E. D. Roberts, R.A.M.C., offers a problem in diagnosis to the neurologist, apart from its intrinsic interest for all who find attraction in the by-paths of medical lore. The patient is a Breton sailor, aged 37, who apparently shows no signs of disease, organic or functional, in his nervous system, except in regard to his sensory apparatus. His condition is one of universal anæsthesia, cutaneous and deep, involving all varieties of the former and some (not all) of the special senses. For the actual details the reader is referred to Captain Roberts's painstaking description. There are certain features of the case which have struck the reporter as somewhat anomalous, and which are worth a little investigation. The patient is unable to make any voluntary movement with the arms when the eyes are closed; without visual control he cannot innervate with accuracy. Oddly enough, though muscular sense is apparently as defective in the legs as in the arms, he can walk quite well with the eyes shut, and he can swim, in spite of the fact that in that art the limbs are not under visual control. This is the condition described by Nothnagel in 1887 as *Seelenlähmung* of organic origin; in certain lesions of the parietal cortex loss of kinæsthetic images of the range and form of voluntary movements occurs, with consequent inability to innervate accurately. Where there is not merely loss of kinæsthetic images, but also loss of appreciation of kinæsthetic impressions, the patient has to depend on his visual memories and impressions of movements, and is helpless without them. Now in the present instance there is no evidence of a parietal lesion, nor, as already noted, is the *Seelenlähmung* constant or logical in its manifestations—a strong presumption in favour of the hysterical nature of the case. Again, when the eyes are closed the limbs may be passively put in any position, and they are so maintained by the patient—a condition of flexibilitas cerea. The mere fact of the position being sustained is proof of the innervation of the muscles in consonance with the kinæsthetic impressions awakened by the passive movement made by the observer. Hence these impressions are certainly present, though the patient may not be actually conscious of them—a point which again pleads in favour of the diagnosis of hysteria, and can scarcely occur in organic loss of kinæsthetic impressions as in advanced syringomyelia. The curious pica shown on occasion by the patient is worth notice, for it is not, of course, in any sense an indication of organic disease. The extraordinary thermanæsthesia is, no doubt, such as may be found in severe cases of syringomyelia. We are reminded of the "professional painless man" whose case was described by Witmer in 1897. In this case the patient could hold a red-hot half-dollar in his hand without wincing until it had burned itself deep into the flesh. Witmer came to the conclusion that the subject did not perceive the pain, and not that he was stoically enduring it, and concluded he possibly suffered from syringomyelia. But the facts of hysteria mutilans show that similarly profound anæsthesia for all stimuli may occur in that psychoneurosis, and we are inclined to suggest to Captain Roberts that hysteria by itself, as readily as the combination of hysteria and syringomyelia which he himself puts forward, will account for the symptomatology of this curious case. The profession is indebted to Captain Roberts for putting the case on record.

MEASURES AGAINST INFLUENZA IN GLASGOW.

THE great industrial city of North Britain has had its public life much interfered with by the serious outbreak of influenza. In the third September week school children in the Shettleston area attended very irregularly, and influenza soon invaded the schools in Govanhill, and then generally throughout the city; incidentally the general death-rate rose from 13·5 to 18·6 and 28·6 in the last week of September and the first week of October. This last-named figure is without precedent since 1909, when an equally high death-rate was associated with intense frost and fog. In the three weeks under review the total deaths registered were 257, 374, and 549, of which 16, 65, and 165 were credited to influenza, 30, 65, and 107 to pneumonia, leaving only 66 to the other forms of respiratory disease. In the same period measles, scarlatina, whooping-cough, and diphtheria together only claimed 29 victims. The dislocation of school attendance was not due to any special incidence at school age, although the proportion of deaths at ages under 5 years was strikingly in excess, as is shown by the following table:—

Age.	Proportion of population.	Proportion of total deaths for the week ending—	
		Sept. 28th.	Oct. 5th.
0–5 years	11·6 per cent.	20 per cent.	24 per cent.
5–15 ,, ...	20·8 ,,	20 ,,	19 ,,
15 years and upwards	67·6 ,,	60 ,,	57 ,,

The decrease in school attendance has been fairly uniform throughout all the standards, and is thus in striking contrast with the effect of an outbreak of measles, which is chiefly noted in the infant classes. This general prevalence raised some doubt as to the utility of school closure, but acting on the view that the risk of infection is always intensified when susceptible persons are collected together under one roof, Dr. A. K. Chalmers, the medical officer of health, adopted experimental closure of certain schools where absenteeism was at its maximum. Nine other schools have now been closed. With regard to the method of spread, everything points to aerial conveyance. There was nothing to suggest direct spray infection, but rather the access of organisms to the body by the nasal passages. Nurses in contact with the disease readily contracted it. Special preventive measures should therefore, in Dr. Chalmers's view, aim at intercepting the organism during the act of breathing by some agent supplied to the nasal passages and air cavities. He quotes Dr. J. Macintyre's suggestions for applying germicidal substances to the nostrils:—

> "If the vehicle in which it is used is the proper kind a very few drops on a handkerchief will act for 12 to 24 hours, or every now and then the agent can be inhaled into the nostrils, and, of course, if the air be taken in through the nostrils this volatile substance will be carried right down to the apices of the lungs. This method of treatment does not mean that sprays or douches should not be used, but what I have found is that for diseases of the respiratory tract, by means of some of these agents and methods of administration, a great deal can be done by way of sedative and antiseptic means to relieve the patient from suffering, and to enable the whole respiratory tract to be kept in a healthy condition."

Dr. Chalmers adds that there seems reason to expect advantage from these measures when exposure to exceptional risk is encountered, as in public assemblies, picture-houses, and conveyances. He considers it essential at the same time not to neglect any factor contributing to personal hygiene.

MENINGOCOCCIC PURPURA WITHOUT MENINGITIS.

AT a meeting of the Société Médicale des Hôpitaux of Paris, M. Arnold Netter and M. Marius Mozer reported the case of a male infant, brought up on the bottle, who was taken to the Trousseau Hospital at 9 A.M. on July 17th. He had been ill for ten days with diarrhœa and tympanites. On the 15th an eruption appeared the nature of which could not be determined at the Saint Louis Hospital. On examination the child was wasted and the eyes were sunken. On the face, trunk, and limbs were numerous little violaceous spots of equal size which did not disappear on pressure. They were evidently purpuric. The temperature was 101·8° F., and there were no signs of visceral disease, no stiffness or Kernig's sign, and the fontanelle was rather depressed. Lumbar puncture yielded clear liquid, not under much pressure, which on centrifugalisation gave a fine deposit containing extracellular diplococci not retaining Gram's stain, and having all the appearances of meningococci, and a few lymphocytes. There were 42 mononuclears to the c.mm. The purpura, therefore, appeared to be due to meningococcic septicæmia, and invasion of the meninges seemed to be imminent. Twenty c.cm. of polyvalent antimeningococcic serum were injected into the sacro-lumbar muscles at once, and the dose was repeated at 6 P.M. Cultures were made from the cerebro-spinal fluid and from blood removed from the jugular vein. The child died at 6 A.M. on the 18th. Four hours after death cerebro-spinal fluid was removed from the lumbar region of the cord and from the right lateral ventricle. The fluid was not yet purulent, but was not so clear as that removed on the previous evening. It contained numerous meningococci, principally extracellular, and cells, amongst which were numerous polynuclears. The blood and the fluid from the lateral ventricle gave pure cultures of the meningococcus, but the cerebro-spinal fluid removed during life gave no culture. At the necropsy the viscera were found normal, with no hæmorrhages. The brain showed only some injection. Without the microscopic examination the localisation of the meningococci in the meninges could not have been recognised or the nature of the disease suspected. M. Netter had recourse to lumbar puncture because he had long observed the relations of meningococcic infection with purpura and had found meningococci in the lesions of purpura. In such purpuras it is not exceptional to obtain cerebro-spinal fluid of normal appearance, which may even contain no microbes. Invasion of the cerebro-spinal fluid occurs after the infection and first in the cranial cavity. In the present case the septicæmia preceded the meningitis.

ACCURATE CLINICAL THERMOMETRY.

THE importance of a correctly recording clinical thermometer receives official recognition in an Order issued last week from the Ministry of Munitions of War. This Order demands that on and after Oct. 21st, 1918, no person shall sell, offer for sale, supply or deliver, any clinical thermometer which has not been tested, approved, and marked in accordance with rules made by the Controller of Glassware Supply on behalf of the Minister of Munitions in consultation with the Local Government Board and the Department of Scientific and Industrial Research. Clinical thermometers must in future bear the stamp of approval of the National

Physical Laboratory, Teddington, and this approval will not be given in regard to thermometers, after a period of one month after the date of the Order, which show at any point in the registration of temperatures an error of more than 0·4° F (+ or −, we may presume). The approved thermometer will be marked with the National Physical Laboratory trade-mark and the year of test, thus—NP 18. Nominal charges are made for the test and guarantee. This Order will bring pressure upon the work of the National Physical Laboratory, which has already undertaken such standardisation voluntarily and in return for a fee, and there are good reasons, doubtless, for making such a step compulsory. Medical men as a matter of scientific routine take care in their work of diagnosis to use correctly recording instruments, but the clinical thermometer has become almost a family guide, and the periodical taking of temperatures is often left in lay hands. To read accurately a thermometer which may prove to be inaccurate in its readings is to mislead the physician. The Order of the Ministry of Munitions brings into prominence the position of the National Physical Laboratory as a centre of standardisation of physical instruments.

SIR WILLIAM HENRY THOMPSON.

ONE of our Irish correspondents calls attention to the presumed loss on the *Leinster* of three members of the medical profession, one of whom was William Henry Thompson, M.D., K.B.E., whose name is closely associated with the scientific aspect of food values. Post-graduate study at Galway, Dublin, London, Leipzig, Paris, Marburg, and Heidelberg widened his outlook, and as King's Professor of Institutes of Medicine in the School of Physic at Trinity College, Dublin, he had long made food metabolism and nutrition his special study. Early in 1916 he read a paper before the Royal Academy of Medicine in Ireland giving a detailed survey of the food-supply of Great Britain on the lines of the Eltzbacher report brought out in Germany 12 months earlier. His intimate acquaintance with food economy, both large and small, made him a valued member of the Advisory Committee to the Ministry of Food, where he placed his knowledge unreservedly at the disposal of other medical colleagues through the columns of THE LANCET whenever his official position allowed of the publicity. One great merit lay in his ability to reduce the cold details of calories and energy values to terms of interest for the common man's breakfast-table. His article in a recent number of *Science Progress* was a conspicuous example of this facility.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—A quarterly meeting of the Council was held on Oct. 10th, Sir George Makins, the President, being in the chair. The President reported that on August 14th the Right Honourable Sir Robert Borden, G.C.M.G., the Canadian Premier, accompanied by officers of the Canadian Army Medical Corps, visited the Museum and formally opened the Canadian Section of the War Office Exhibition of Medical Specimens. The Library Committee reported that Mr. Plarr, the librarian, was preparing a Roll of the Fellows, for which he has written about 1410 lives up to the present time. The Council, in pursuance of the recommendation of the Jenks Scholarship Committee, appointed Mr. Thomas Haines Sims, late of Epsom College, the twenty-sixth Jenks Scholar. The Council, in response to a letter from the Medical Secretary of the British Medical Association, approved of the calling of a conference in regard to the establishment of a Ministry of Health. The President reported that the Bradshaw lecture on "Cancer of the Tongue" would be delivered by Mr. D'Arcy Power on Thursday, Nov. 14th, at 5 P.M.

THE MEDICAL MAN'S INCOME-TAX.

By JOHN BURNS, W.S.

PAPER restrictions compel what follows to be a study in income tax and condensation combined. This article, also, does not deal with super-tax.

Income.—Ordinary professional income is taken on the average of the preceding three years. The income from specific appointments under public bodies is taken on the actual amount of the year. The former is charged under Schedule D, the latter under Schedule E. Where appointments carry not only a salary but also free residence, board, service, &c., only the cash salary is taxable income; the other items do not count at all. Sums received for drugs must go in as drawings. But, of course, what is taxed is net income, and therefore many deductions must come off. These include: rent or annual value of premises used exclusively for practice; a proper proportion of rent or annual value of residence, according to the part used for practice, not exceeding two-thirds; rent or annual value of garage or stable; inhabited house duty and tenants' rates, heating and lighting, corresponding to the above items; assistants and locum tenens; service applicable to the professional practice, including maid servant and secretary or book-keeper and any assistance obtained in dealing with the income-tax problem; travelling, including railway, car, carriage, and for horses, not the original cost, but all running expenses, repairs, and renewals, less salvage for the old articles; instruments, with the like restriction; drugs, &c.; professional subscriptions and literature; telephone, telegrams, stationery, and postage. As regards practice (except appointments), an account is made upon these lines for, say, each of the three years, April, 1915, to April, 1916, also 1916–17, also 1917–18, and adding the net results together and dividing by three there is brought out the "statutory income" under Schedule D tax for the now current year, April, 1918, to April, 1919. To that will be added the cash salaries of any public appointments for that year.

Cash or earnings.—There is an option to deal with the drawings on the basis of either cash or earnings. The cash system means that you ignore all fees earned but not actually received, and all expenses incurred but not actually paid. Of course, these will all come in next year or later. This saves you all trouble about bad or doubtful debts. The earnings system, on the other hand, brings into account everything earned or incurred respectively, though not received or paid; but, of course, the same items must not figure more than once. If under this system you estimated fees due to you £20, and if you receive only £15 or £25, only the difference of £5 will be treated in next year's account. We believe that nearly all practitioners adopt the cash system.

Actual income.—If you are serving in the R.A.M.C., or doing other war work as explained below, you are entitled to throw over the three years' average and to be assessed on your whole professional practice at the actual figure of the year. That can be ascertained only at the end of the year, and there will then be an adjustment. This holds whether you adopt "cash" or "earnings." Actual cash is treated as actual income. Further, in any case, war work or not, if your actual income of the year from all sources, taken together (including wife's), is less by more than 10 per cent. than the total charge made on you by direct assessment and deductions, then you are entitled to claim to be taxed on the actual income only.

Other income.—Of course all your non-professional income must be added on in order to reach your total, and so to fix your rates of tax and abatements, if any. This includes income from investments, and the annual value of your residence if it belongs to you or to your wife, but only at the net Schedule A assessment figure.

Wife's income.—This reminds us that your wife's income must for tax purposes be added on to your own. There is an exception of her separately *earned* income, if the total of both does not exceed £500.

Deductions.—You take off all true deductions—e.g., ground burdens, mortgage interest, bank interest, interest on price of practice.

Rates of tax.—Broadly, these are the items which make up the total. That total fixes your rate or rates. You may or may not be entitled to abatements (below), but these do not affect the *rate* or *rates*, though they do affect the sum on which these are payable. The rates are:—

If total income does not exceed—	Rate of tax on the part which is—		
	Unearned	Professional.	War work
£	s. d.	s. d.	s. d.
500	3 0	2 3	1 5
1000	3 9	3 0	1 9
1500	4 6	3 9	2 3
2000	5 3	4 6	2 9
2500	6 0	5 3	3 3
Over 2500	6 0	6 0	3 6

Abatements.—These are the rates, but on what are they payable? Answer: The net total above indicated, less abatements, as follows:—

1. *Scale.*—If total not over £400, £120; if not over £600, £100; if not over £700, £70.
2. *Wife.*—£25 if total income not over £800.
3. *Widower's housekeeper.*—The same. The housekeeper must be a relative of the taxpayer or of his late wife, and there must be a child under 16.
4. *Children.*—£25 for each child, step-child, or adopted child under 16. If the income does not exceed £800 all such children count; if it exceeds £800, but is not over £1000, all under 16 count bar two; if over £1000, no allowance.
5. *Life insurance.*—Premiums up to one-sixth of the taxable income. Suppose income £600, and the abatements £200, still this insurance abatement may be £100 if so much has been paid. There are certain restrictions, especially upon new policies effected after June, 1916, and, on the other hand, war "extras" are allowed beyond the one-sixth. Also it may be one-sixth of the 1913-14 (last pre-war) income, if that was larger.
6. *Incapacitated dependent relatives.*—If total income not over £800, £25 for each such relative of self or wife maintained by you, if relative's income not over £25.
7. *Marginal.*—In applying these scales and income limits there is come and go to this extent that if you are, say, £5 above some limit you pay that £5 to the Commissioners and then you get off as if you had never had it. If your income is, say, £810 and you have a wife and a lot of young children this is valuable.
8. *Officer's uniform.*—There is an allowance (of varying amount) for this if you are an R.A.M.C. or other officer. It is treated as an actual deduction from the pay, and not merely an abatement. It may alter the whole position.

Applying the abatements.—They always come off the lowest taxed part of your income first. This may greatly lessen their value. If you make £600 and your wife has from investments £200 all abatements will be first taken off at the 3*s.* rate and not at the 3*s.* 9*d.* But R.A.M.C. and other war services are treated better; if there is such income, abatements are taken off in this order: (1) ordinary professional income; (2) unearned; (3) service pay. These abatements are, as far as possible, given effect to in the direct assessment on the practice. But still it is often necessary to send in—

Repayment claims.—They are in time within three years. At present you may go back to April, 1915. Consider whether you have obtained your rights in all the respects above referred to. Do not forget interest paid to any bank. It would be paid without deduction of tax. That means that you are entitled to apply to the Inland Revenue for a refund of an amount equal to the tax on the interest if you did not receive it off in the assessment on your practice. Also, the non-deduction of the interest may upset your whole tax position for the last three years. These things can still be put right for that period.

Rate relief.—The same applies to the tax deducted at the source on dividends, &c., on your own and your wife's investments, including perhaps the house. It is always taken off at the highest rate. During the years in question it has been 3*s.*, 5*s.*, and is now 6*s.* But that is more than people with modest incomes have to bear ultimately. This relief is often given on the Schedule D assessment; but if not, then there must be a repayment claim. Do not be misled by dividends "free of tax." That is only an expression. You pay the tax all the same, and have repayment rights accordingly.

War work.—We have above used this term for brevity, but as this is a matter on which many inquiries might arise it may be better to state that the benefit of the reduced rate of tax, *on the pay only*, is available to all who in the tax year in question have served as (1) a member of any of the naval or military forces of the Crown or of the Air Force, which one is not deemed to have done unless he has served (*a*) on the active list of the Navy, or (*b*) in the Army with the colours, or (*c*) as an airman in the Air Force, or (*d*) as an Army or Air Force officer on full pay or at a rate of pay which appears to the Income-tax Commissioners and the Army or Air Council equivalent to full pay, and that either out of the British Isles or for one month continuously in these isles; or (2) in service of a naval or military character in connexion with the war, for which payment is made out of money provided by Parliament; or (3) in work *abroad* of the British Red Cross, St. John Ambulance, or similar body.

Changes.—We have stated this year's rules. Those for the three previous years have varied a good deal. The rates of tax were lower, so were the children abatements. The wife abatement is new this year. It is only this year that the limit for the family abatements has been raised from £700 to £800.

Partnerships.—The rate of tax is determined by the true tax position of each of the partners. Thus, though 4*s.* 6*d.* is the earned rate on a profit of £2000, if there are two partners equally interested the tax will be charged at 3*s.*, being the £1000 earned rate. But if one takes £1200 and the other £800 tax will be charged on £1200 at 3*s.* 9*d.* and on £300 at 3*s.* That is subject to giving effect to the partners' different abatements; one may have no abatements, and the other's may be important. All which shows that much care is required in seeing that the incidence of the tax is properly regulated in the partnership accounts.

Where one partner is serving in the war the firm's assessment is made up on the footing (1) of charging him on his actual profits of the year; and (2) of charging the other partners on the average, not of the three preceding years, but of the two preceding years and the tax year itself; but this is done only if it benefits them, and in no case can they get off on less than the actual figures of the year.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Radio-surgical Aeroplane.

A NEW medical application for the aeroplane has been proposed, no longer to transport the wounded man to hospital, but to carry the surgeon to him. MM. Nemirovsky and Tilmant describe a machine which they call the "aerochir," being a three-seater carrying a pilot, a surgeon, and a radiographer, along with radiological and surgical outfits of small dimensions sufficient to serve for all operations. The dynamo of the aeroplane furnishes the current necessary for radiology and for heating the steriliser. An aluminium folding operation table renders possible the extraction of projectiles by means of the screen. This aerochir is adapted to carry to the front a relieving party equipped with surgical and radiological necessaries in a minimum of time and without risk of being held up on congested roads during an engagement. A dressing station unable to cope with a sudden influx of wounded could thus receive efficacious help within a few minutes.

The Cerebro-spinal Fluid in Typhus.

Dr. Devaux, on his return from Roumania, where he was attached to the French Military Mission, has made an important report on the epidemic of typhus which raged there during the last two winters. He lays great stress upon the neurotropic affinities of the (still unknown) causative agent of the disease, basing his view on the predominance of nervous symptoms at the onset, their persistence throughout the attack, the frequency and gravity of the nervous complications and sequelæ of convalescence, and the wide distribution of lesions in the nerve centres seen at autopsy contrasted with the comparative immunity of the other organs. Cytological examination of the cerebro-spinal fluid is of marked clinical value and has some bearing on prognosis. Leucocytosis occurs early in every case and persists for two to eight months, covering the whole duration of complications. The increase of polynuclear cells is proportional to the gravity of the prognosis. Convalescence is heralded by a rapid diminution in the mononuclear forms, with a predominance of disintegrating cells.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Loss of the "Leinster."

IN the destruction of the R.M.S. *Leinster* last week at least three medical men were on board and have not since been traced, and several nurses have also disappeared. Along with the names of Captain Digby Burns, R.A.M.C., and Dr. R. E. Lee, is that of Sir W. Henry Thompson, D.Sc., whose loss is deeply felt in Belfast. In 1893 when, on the resignation of the late Dr. Peter Redfern, the double chair held by that distinguished teacher of anatomy and physiology in Queen's College, Belfast, was divided into separate departments, Dr. W. H. Thompson was appointed as Dunville professor of physiolcgy, a position he occupied until 1902, when he left Belfast on being selected as King's Professor of Institutes of Medicine in Trinity College, Dublin. He married Miss Isabel Redfern, the eldest daughter of Professor Peter Redfern, and to her and to their son and four daughters the sincerest sympathy of a very large circle of old friends in Belfast and the north of Ireland will be extended in their tragic and terrible loss. Sir W. H. Thompson came to Belfast a complete stranger, with a high record as a Galway College student, and as a demonstrator of anatomy in Trinity College, Dublin. He most worthily maintained and increased his fine early professional promise, and put the new department of physiology in the Belfast School of Medicine in a sound position. A thoroughly hard-working man, of marked independence of character, and determined to succeed, he impressed his colleagues with his great worth, while socially he took his proper position among the people and the affairs of the City of Belfast, following Professor Redfern's admirable example.

Scheme for Medical Attendance on Discharged Disabled Men.

The National Health Insurance Commission (Ireland) have now issued to the members of the medical profession an invitation to join in the scheme for giving medical attendance to discharged disabled sailors, soldiers, marines, and airmen resident in Ireland. The necessity for the scheme arises from the absence of the medical benefit from the National Health Insurance Acts as applied to Ireland. The Government is providing a sum of money equal to a capitation-rate of 12*s.* 6*d.* per head for each discharged disabled man resident in the large towns and 15*s.* for those in the country. The fund for the whole country will go into a common pool, and payment will be made to the practitioners who give treatment in proportion to the work done by each. An elaborate system of token values has been arranged for the several services likely to be rendered.

Royal Academy of Medicine in Ireland.

The annual general meeting of the Royal Academy of Medicine in Ireland was held on Oct. 11th. The number of Fellows increased during the year from 131 to 133, and the number of Members decreased from 17 to 15. The results of elections to the various offices were announced. Sir John Moore, D.Sc., succeeds Dr. R. D. Purefoy as President, and Major F. C. Purser succeeds Sir John Moore as secretary for foreign correspondence.

Oct. 14th.

MEDICINE AND THE LAW.

Pratt and Others v. *The British Medical Association.*

JUDGMENT was delivered by Mr. Justice McCardie on Tuesday last in the case in which several Coventry doctors sued the British Medical Association, and three of its local members, for conspiracy, libel, and slander. The Association had charged the plaintiffs with conduct detrimental to the honour and interests of the profession in carrying on a dispensary at Coventry on principles fundamentally opposed to those approved of by the Coventry division of the Association. His lordship, sitting without a jury, found in favour of the plaintiffs and awarded damages as follows: For unlawful molestation Dr. Burke £1000, Dr. Holmes £700, and Dr. Pratt £700; for defamation, Dr. Burke £420, Dr. Pratt £630, and Dr. Holmes £360. In delivering judgment Mr. Justice McCardie said that in his view the plaintiffs were boycotted, punished, and pecuniarily damaged without just cause in law, and he felt compelled to come to the reluctant conclusion that the plaintiffs had established actual malice against the defendants. Plaintiffs, he added, must have the costs of the action, save in so far as any costs arose on issues in which they had failed. The terms of injunction remain for consideration.

An Audacious Impostor.

At Liverpool recently a man named Blacklin, 35 years of age, was convicted of giving false information on a registration form, with being an unauthorised person wearing six military decorations, and with wearing uniform so closely resembling that of the Royal Navy that it was calculated to deceive. On the first two charges he received concurrent sentences of six months' imprisonment, and on the third was ordered to pay a fine of £50, with the alternative of imprisonment for three months. He had engaged a room at a hotel in the character of Black, Surgeon, R.N., and had shown a card with the printed inscription, "Surgeon-Major Sir Patrick Black, Bart., M.V.O.," an assumption of titles which would have led to his immediate undoing on the exhibition of such a card to anyone with a glimmer of social knowledge. According to his own tale told to the police, with possible inaccuracies and exaggerations, he had been before the war in turn a messenger boy at the War Office, attached to the R.A.M.C., and a dispenser in New Zealand. He joined the Expeditionary Force and had been wounded twice, and had afterwards selected the name of Patrick Black in the Medical Register because that was a name resembling his own, and he saw opportunities. He had written to the Registrar of the General Medical Council asking him to change the address of that gentleman to his own address. He had no difficulty in obtaining the post of medical officer on board a steamship, and in that capacity had made two voyages. Whatever amount of truth there may be in this story, it points to the necessity for taking every reasonable precaution on the part of those controlling medical appointments. The adoption of the name of a medical practitioner actually on the Register is, however, probably not very often practised, and to obtain the alteration of the address is so obviously likely to lead to speedy detection that the example of Blacklin will hardly be followed by others.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

SUBSCRIPTIONS TO THE SECOND APPEAL.

THE following subscriptions have been received up to Monday last, Oct. 14th:—

	£	*s.*	*d.*
Miss Agnes M. Cowan, M.O. i/c Q.M.A.A.C.	2	2	0
Dr. W. H. Davies (quarterly)	1	10	0
Mr. E. Spencer Evans (monthly)	0	10	0
Dr. J. W. Papillon (quarterly)	0	10	6
North of England Branch B.M.A.:—			
Dr. T. L. Bunting ...	5	5	0
Dr. F. Beaton	1	1	0
Dr. F. Bell	1	0	0
Major L. G. Dillon ...	1	1	0
Dr. J. Chalmers	2	2	0
Dr. O. W. Ogden ...	5	5	0
Dr. A. S. Percival ...	1	1	0
Dr. D. Revie	1	1	0
Dr. G. H. Lowe	1	1	0
Dr. J. Charles	2	2	0
Mr. Morison Johnston	1	1	0
Dr. F. Barker	1	1	0
Dr. H. E. Mortis (second donation this year) ...	3	0	0

[1] Per Dr. J. Don, Hon. Sec.

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham Gate, London, S.W. 1, and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Limited.

SIDMOUTH ISOLATION HOSPITAL.—At the last meeting of the Devon County Council it was reported that the Sidmouth Urban Council had received notice to quit the premises they occupy as a temporary isolation hospital. The Sidmouth council are anxious to provide a permanent isolation hospital for their district, and requested the county council to release them from the scheme for the constitution of a hospital district (including Sidmouth) and provision of an isolation hospital for East Devon. The county council decided to inform the Sidmouth authorities that there was no objection to the provision of a temporary hospital during the war, but that the county scheme would be proceeded with as soon as circumstances permitted.

The War.

THE CASUALTY LIST.

THE following medical officers appear among the casualties announced since our last issue:—

Killed.

Capt. G. A. G. Bonser, R.A.M.C., attached Norfolk Regiment, was educated at Cambridge University and at St. Thomas's Hospital, London, and held appointments at St. Thomas's and also at the Addenbrooke's Hospital, Cambridge. Prior to joining the R.A.M.C. he was in practice at Sutton-in-Ashfield, Notts.

Capt. K. Elmes, R.A.M.C., attached London Regiment, qualified in Ireland in 1916, and joined up forthwith.

Capt. A. Ross, Canadian A.M.C.

Capt. J. A. Stanley, R.A.M.C., attached Royal Warwickshire Regiment, came over with the Canadian Expeditionary Force, and later obtained a commission in the R.A.M.C.

Capt. R. P. Young, Australian A.M.C.

Capt. H. A. Culham, Canadian A.M.C., was educated at the University of Toronto, and qualified in 1910. Prior to joining the Expeditionary Force he was in practice at Viceroy, Moose Jaw.

Died.

Capt. B. H. Leigh, R.A.M.C., qualified at Edinburgh in 1895, and after serving as a surgeon to the Pacific Steam Navigation Company he practised for some years at Southend-on-Sea. Later he retired, and on the outbreak of war resumed his professional work by joining the R.A.M.C. He died at the Epsom War Hospital from illness contracted on foreign service.

Major P. T. Priestley, R.A.M.C., was educated at Birmingham University and qualified in 1912. He held an appointment at the Birmingham General Hospital and later practised at Moseley. He died at Salonika from influenza.

Previously Reported Wounded, now Reported Died of Wounds.

Capt. K. McA. Ross, R.A.M.C., attached Highland Light Infantry, qualified at Glasgow in 1915 and joined up shortly afterwards.

Wounded.

Major T. Ferguson, R.A.M.C.
Capt. G. B. Egerton, R.A.M.C.
Lieut.-Col. H. L. Welch, Australian A.M.C.
Capt. F. G. Banting, Canadian A.M.C.
Capt. A. McA. Blakely, Canadian A.M.C.
Capt. H. S. Berry, R.A.M.C., attd. Royal West Surrey Regt.
Major W. Hunt, M.C., R.A.M.C.
Major T. J. Lindsay, R.A.M.C.
Capt. J. C. Dunn, D.S.O., M.C., D.C.M., R.A.M.C., attached East Yorks Regiment.
Capt. B. M. Tuke, M.C., R.A.M.C., attd. Royal Welsh Fus.
Major J. Vallance, R.A.M.C.
Capt. H. E. B. White, R.A.M.C., attached Yorks Regiment.
Capt. H. G. Young, D.S.O., Canadian A.M.C.
Capt. F. S. Belaie, M.C., R.A.M.C., attached Lancs Fus.
Lieut. A. C. Paterson, R.A.M.C., attd. Royal West Surrey Regiment.
Capt. D. G. K. Turnbull, M.C., Canadian A.M.C.
Capt. H. M. Joseph, R.A.M.C., attached Essex Regt.
Major J. B. Scott, M.C., R.A.M.C.

CASUALTIES AMONG THE SONS OF MEDICAL MEN.

The following additional casualties among the sons of medical men are reported:—

Second Lieut. C. J. N. Lambert, M.C., R.F.A., killed in action, elder son of Dr. H. L. Lambert, of Barnes, London, S.W.

Lieut. R. M. Bennett, R.A.F., killed in action, elder son of Dr. J. H. Bennett, of Beckenham.

Second Lieut. J. C. Maurice, Royal Berkshire Regiment, killed in action, youngest son of Brevet Colonel W. J. Maurice, R.A.M.C., T.F., of Reading.

Lieut. E. T. Halford, R.E., died at Aldershot, son of the late Dr. E. Halford, of Hammersmith, London, S.W.

Second Lieut. H. F. Weiss, London Regiment, killed in action, only son of the late Mr. H. F. Weiss, F.R.C.S., of Hanover-square, London, S.W.

Second Lieut. Rev. R. H. A. Cotton, A.S.C., youngest son of Dr. C. Cotton, of Canterbury.

Second Lieut. J. S. Ricketts, R.F.A., eldest son of the late Dr. T. F. Ricketts, of the Joyce Green Hospital, Dartford.

OBITUARY OF THE WAR.

ALEXANDER JOHNSTON, M.D. GLASG., D.P.H. CAMB.,

MAJOR, ROYAL ARMY MEDICAL CORPS.

Major A. Johnston, who died at a nursing home in Glasgow on Sept. 22nd, was son of the late Robert Johnston, of Dumbarton. He was educated at Glasgow Academy and at the University where he graduated M.B., C.M. in 1883, subsequently holding resident posts at Manchester Royal Infirmary and Monsall Hospital. He then travelled widely in Europe and America before settling down to his life-work as physician-superintendent of the Glasgow City Hospitals, a position which he held for 22 years. He was also deputy medical officer of health and lecturer on infectious diseases in the University, being responsible for a number of important papers and reports on epidemiology. In April, 1915, he was appointed officer in command of the Thornhill Military Hospital, continuing until July last, when he underwent an operation which unexpectedly had a fatal termination.

Major Johnston was a man of many interests. He was deeply read in Scottish history. He was an active chairman of the Glasgow Eastern Medical Society. Of a kindly disposition, he had the reputation of being fearless in the discharge of his duty and careful for the well-being of those under him. His widow, the eldest daughter of Mr. Richard Allan, medical officer of health for Dumbarton, survives him.

BERNARD CHARLES TENNENT, M.D., CH.B. EDIN.,

MILITARY CROSS WITH BAR,
MAJOR, ROYAL ARMY MEDICAL CORPS.

Major B. C. Tennent, who was killed in action on August 22nd, was son of the late Rev. E. C. Tennent, of Martinborough, N.Z. After graduating in medicine at Edinburgh University and holding resident appointments in London at the Great Northern and Ormond-street Hospitals, he went out to New Zealand and settled in Wellington. Returning to this country on the outbreak of war, he received a commission in the R.A.M.C. in January, 1915, serving for three and a half years on various fronts. The Military Cross was awarded to him "for conspicuous gallantry and devotion to duty in constantly exposing himself with the utmost fearlessness under heavy shell fire in order to visit his posts in the front trenches." The addition of the bar was further proof of his courage and presence of mind. A friend who knew Major Tennent well writes of his combination of manly and athletic qualities with gentleness and grace of spirit. Major Tennent married in June, 1917, Daisy, youngest daughter of the late C. C. Skarratt.

"OUR DAY," 1918.—The KING and QUEEN have each subscribed £1000 to the funds of the Red Cross for "Our Day," Oct. 24th. The Lord Mayor has asked the City of London to subscribe £1,000,000 for "Our Day."

THE HONOURS LIST.

The *Distinguished Service Cross*, for services in the destroyer action in the Adriatic on the night of April 22nd–23rd, 1918, has been conferred upon—

Surg. Prob. Charles C. Elliott, R.N.V.R.

He carried out his duties in attending wounded under heavy fire and difficult conditions. Although he was suffering from a painful sprained wrist, his skilful work undoubtedly saved several lives. His conduct was an example and encouragement to all on board.

And for services in the Battle of Jutland on May 31st, 1916, upon—

Surg. Prob. Alexander Joe, R.N.V.R.

Medical Officer of H.M.S. *Nestor*. He behaved with the greatest coolness under fire, tending the wounded single-handed both in *Nestor* and later on board a German destroyer. His conduct was highly praiseworthy throughout.

The following appointments to the *Order of the British Empire* are announced:—

Officers.—Dr. Mary Booth (organised Friendly Union of Soldiers' Wives and Soldiers' Club, Sydney); Lt.-Col. A. S. Hornett, New Zealand M.C. (for special services in connexion with military hospitals at Rotorua); Lt.-Col H. H. Y. Hearsey, Principal Medical Officer to the Civil Government and Assistant Director of Military Medical Services, Nyassaland Protectorate.

Members.—Dr. C. Akerman (Natal); Dr. P. P. J. Ganteaume, Mayor of East London, S.A.; Dr. R. Strachan, Mayor of Germiston, S.A.; Dr. J. B. Addison, Chief Medical Officer, Colony of Seychelles (for services in connexion with war charities); Dr. R. Howard, of the Universities Mission to Central Africa (for voluntary service in attending sick and wounded native soldiers and carriers, Zanzibar); Surgeon-Major John Hutson, Public Health Inspector, Barbados, and Principal Medical Officer to the Barbados Defence Force; and Dr. J. Lochhead, Surgeon, Colonial Hospital, Gibraltar (for services to merchant seamen).

MENTIONED IN DESPATCHES.

The names of the following medical officers are added to recent despatches:—

Maj.-Gen. W. G. A. Belford, C.B., C.M.G., A.M.S.; Temp. Capt. M. B. Arnold, R.A.M.C.; Capt. B. A. Odlum, R.A.M.C.; Lt. (temp. Capt.) W. H. Ferguson, R.A.M.C.; Temp. Capt. A. C. Mann, M.C., R.A.M.C.; Col. R. M. Simpson, Canadian A.M.C.; Temp. Maj. J. J. Abraham, R.A.M.C.; Lt.-Col. (temp. Col.) G. A. T. Bray, R.A.M.C.; Maj. (temp. Lt.-Col.) M. Dunning, R.A.M.C.; Col. R. G. R. Evatt, R.A.M.C.; Capt. (acting Lt.-Col.) S. C. Lambkin, R.A.M.C.; Temp. Lt.-Col. H. Waite, R.A.M.C.; Lt.-Col. R. T. Brown, D.S.O., R.A.M.C.; Maj. (temp. Lt.-Col.) P. S. Clarke, South African M.C.; Capt. T. S. Dunn, East African Med. Service; Temp. Maj. W. J. Gow, R.A.M.C.; Maj. R. S. Kennedy, M.C., I.M.S.; Capt. (acting Lt.-Col.) J. A. Manifold, R.A.M.C.; Lt.-Col. P. W. O'Gorman, I.M.S.; Surg.-Prob. J. E. Deane, R.N.V.R.

BROUGHT TO NOTICE.

The names of Major W. McConaghy, R.A.M.C., and of Temp. Capt. W. N. Montgomery, R.A.M.C., have been brought to the notice of the Secretary of State for War for valuable services rendered in connexion with military operations in Hedjaz.

FOREIGN DECORATIONS.

French.

Croix de Guerre.—Temp. Capt. J. B. McFarland, M.C., R.A.M.C.; Capt. (acting Maj.) E. R. Lovell, R.A.M.C.; Capt. M. J. Holmes, Australian A.M.C.; Maj. (acting Lt.-Col.) H. H. A. Emerson, D.S.O., R.A.M.C.; Capt. S. R. Foster, M.C., R.A.M.C.; Maj. (temp. Lt.-Col.) W. J. S. Harvey, D.S.O., R.A.M.C.; Maj. (temp. Lt.-Col.) F. D. G. Howell, D.S.O., M.C., R.A.M.C.; Capt. P. McEwan, R.A.M.C.; Maj. (acting Lt.-Col.) P. J. Marett, R.A.M.C.; Capt. (acting Maj.) J. J. McI. Shaw, M.C., R.A.M.C.; Capt. (acting Maj.) W. L. Webster, R.A.M.C.; Temp. Capt. A. B. Cluckie, R.A.M.C.

Légion d'Honneur: Croix de Chevalier.—Col. H. R. Casgrain, Canadian A.M.C.; Hon. Maj. C. F. Skinner, Canadian A.M.C.

Portuguese.

Military Order of Avis, 2nd Class.—Major W. H. G. H. Best, R.A.M.C.

Hellenic.

Order of the Redeemer.—2nd Class, Grand Commander: Surg.-Gen. Sir H. R. Whitehead, K.C.B. *3rd Class, Commander*: Lieut.-Col. A. R. Aldridge, C.B., C.S.I., C.M.G., R.A.M.C. *5th Class, Cavalier*: Capt. J. P. Litt, R.A.M.C.

Japanese.

Order of the Sacred Treasure, 3rd Class.—Col. T. J. R. Lucas, C.B. (retired pay).

INFLUENZA ON AMERICAN TRANSPORTS.

Alarming accounts have been current regarding the prevalence and fatality of influenza among the U.S.A. troops on their way across the Atlantic, especially on the ill-fated s.s. *Otranto*. There has evidently been some confusion between the number of cases and the number of deaths. Regarding the *Otranto*, we are in a position to state that up to the time of arrival in English waters there had been about 50 cases of influenza and pneumonia. Four of these cases of pneumonia proved fatal. Among the survivors, a considerable number of whom were injured in the accident, deaths have occurred from pneumonia due to exposure during rescue. But this mortality should, of course, not be credited to the prevailing epidemic.

MAJOR-GENERAL M. W. IRELAND, THE NEW SURGEON-GENERAL, U.S.A.

As we announced last week, Major-General Merritte W. Ireland has been appointed Surgeon-General to the United States Forces. General Ireland entered the Medical Corps of the American Army in 1891 as a first lieutenant. He was promoted to the grade of captain in 1896. During the Spanish-American War he was with the Fifth Army Corps expedition, which fought the battle of Santiago and received the surrender of the city. Shortly after the conclusion of the Cuban campaign General Ireland was sent to the Philippine Islands as major and surgeon of the 35th Infantry, U.S. Volunteers. Soon after arrival there he was detached from regimental service and placed in charge of the Medical Supply Depôt in the city of Manila, which he administered with great success. Returning to the United States at the end of two years, he was called to the Surgeon-General's office in Washington, D.C., in 1902, under Surgeon-General O'Reilly, and placed in charge of the personnel division of that office, which he administered most successfully until 1912, when he was again sent to the Philippines and put in charge of a large hospital in the vicinity of the city of Manila, located at Fort William McKinley.

General Ireland returned to the United States in 1915, and at the time that America entered the present war was the commanding officer of the large base hospital at Fort Sam Houston, Texas. Detached from this duty, he accompanied General Pershing to Europe as a member of his staff and filled the position of assistant to the chief surgeon of the American Expeditionary Forces from July, 1917, until March, 1918, when he was promoted to chief surgeon of the command while yet a colonel. His promotion to the grade of brigadier-general followed in May of the present year, and he attained the grade of major-general in the Medical Corps last August. General Ireland returns to the United States very shortly to take up the duties of his new position at U.S. Army Headquarters at Washington. He has always been a man of untiring energy and acute judgment in the conduct of affairs, and the Medical Corps under his strong guidance will acquit itself well in the great endeavour which it has now before it.

THE INCOME-TAX OF MEDICAL WOMEN ATTACHED TO THE R.A.M.C.

Dr. Louisa Garrett Anderson has written calling attention to the fact that medical women attached to the R.A.M.C. do the work of commissioned officers when enforcing discipline in such a hospital as the General Military Hospital, Endell-street, perform the surgical duties of officers in the R.A.M.C., and receive the same rate of pay, but because they do this without having commissions or honorary commissions they are not entitled to the Service rate of income-tax. Where abatement is made in the case of men on the ground that they are doing work of a military character, it is not easy to see why work of the same kind performed by women should not entitle them to the same privilege.

URBAN VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING SEPTEMBER, 1918.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 4·7 per 1000 of the population, estimated at 4,026,901 persons; in the three preceding months the rates had been 4·5, 3·5, and 3·2 per 1000. No case of any of these diseases was notified during the month of September in the City of London. Among the metropolitan boroughs the lowest rates were recorded in Chelsea, the City of Westminster, St. Marylebone, Hampstead, and Holborn; and the highest rates in Finsbury, Bethnal Green, Stepney, Southwark, Bermondsey, and Greenwich. The prevalence of scarlet fever was 60 per cent. higher than in the preceding month; this disease was proportionally most prevalent in Finsbury, Bethnal Green, Stepney, Southwark, Bermondsey, and Lambeth. The Metropolitan Asylums Hospitals contained 931 scarlet fever patients at the end of the month, against 846, 753, and 690 at the end of the three preceding months; the weekly admissions averaged 163, against 127, 105, and 101 in the three preceding months. The prevalence of diphtheria was about 50 per cent. higher than in August; the greatest proportional prevalence of this disease was recorded in St. Pancras, Hackney, Bethnal Green, Stepney, Southwark, Bermondsey,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING SEPTEMBER, 1918.

(*Specially compiled for* THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1917.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.									
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.	Deaths from all causes.	Death-rate per 1000 living.
LONDON	4,026,901	—	641	610	1	28	—	10	149	8	5	1462	4·7	—	18	9	29	28	7	303	394	1·3	3537	11·4
West Districts :																								
Paddington	122,507	—	22	16	—	2	—	—	5	—	—	45	4·8	—	1	—	—	1	—	4	6	0·6	106	11·3
Kensington	151,535	—	27	6	—	—	—	—	3	—	—	36	3·1	—	—	—	1	1	—	9	11	0·9	121	10·4
Hammersmith ...	114,962	—	19	10	—	1	—	—	3	—	—	33	3·7	—	—	—	1	1	—	5	7	0·8	103	12·2
Fulham	145,186	—	17	11	—	2	—	—	3	—	—	33	3·0	—	—	—	—	—	—	18	18	1·6	131	11·8
Chelsea	57,368	—	5	2	—	—	—	—	2	—	—	9	2·0	—	—	—	—	1	—	1	2	0·5	46	10·5
City of Westminster	122,046	—	5	8	—	—	—	—	4	1	—	18	1·9	—	—	—	—	—	—	5	5	0·5	86	9·2
North Districts :																								
St. Marylebone ...	92,796	—	8	7	—	—	—	—	2	—	—	17	2·4	—	—	—	—	—	—	4	4	0·6	91	12·8
Hampstead	75,649	—	1	7	—	1	—	1	3	—	1	14	2·4	—	—	—	—	—	1	1	2	0·3	51	8·8
St. Pancras	186,600	—	22	47	—	1	—	—	12	—	—	82	5·7	—	6	—	—	—	2	13	21	1·5	182	12·7
Islington	297,102	—	38	42	—	5	—	—	18	—	1	104	4·6	—	—	—	3	4	—	13	20	0·9	259	11·4
Stoke Newington...	47,426	—	6	3	—	—	—	1	1	—	—	11	3·0	—	—	—	2	—	—	—	2	0·5	36	9·9
Hackney	196,598	—	21	43	—	2	—	3	6	—	—	75	5·0	—	—	—	2	—	1	24	27	1·8	185	12·3
Central Districts :																								
Holborn	35,303	—	—	2	—	—	—	—	—	—	—	2	0·7	—	—	—	—	—	—	2	2	0·7	44	16·2
Finsbury	68,011	—	21	6	—	—	—	—	5	—	—	32	6·1	—	—	1	—	2	—	4	7	1·3	63	12·1
City of London ...	16,138	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	0·8	8	6·5
East Districts :																								
Shoreditch	89,675	—	9	9	—	—	—	—	4	1	1	24	3·5	—	—	—	1	—	1	15	17	2·5	86	12·5
Bethnal Green ...	107,362	—	38	26	—	—	—	—	16	1	—	81	9·8	—	—	1	1	—	—	14	16	1·9	114	13·8
Stepney	232,010	—	56	69	—	—	—	—	10	—	—	135	7·6	—	2	1	4	2	—	26	35	2·0	216	12·1
Poplar	143,443	—	19	22	—	1	—	—	4	—	1	47	4·3	—	—	—	3	—	—	22	25	2·3	158	14·2
South Districts :																								
Southwark	167,936	—	89	50	—	—	—	1	12	—	—	152	11·8	—	1	2	1	2	—	14	20	1·6	149	11·6
Bermondsey	107,635	—	23	24	1	—	—	—	2	—	—	50	6·1	—	3	—	—	3	—	11	17	2·1	113	13·7
Lambeth	272,038	—	55	30	—	—	—	—	6	1	—	92	4·4	—	—	3	1	5	—	18	24	1·2	241	11·5
Battersea	150,023	—	17	18	—	—	—	—	3	—	—	38	4·3	—	—	—	1	3	—	13	17	1·5	130	11·3
Wandsworth	300,787	—	39	22	—	5	—	—	11	2	—	79	3·4	—	2	—	—	—	1	23	26	1·1	237	10·3
Camberwell	239,461	—	24	47	—	1	—	—	4	1	—	77	4·2	—	1	—	2	1	1	9	14	0·8	191	10·4
Deptford	103,527	—	18	18	—	1	—	1	4	—	1	43	5·4	—	—	—	1	—	—	7	8	1·0	86	10·8
Greenwich	90,440	—	10	32	—	2	—	—	2	—	—	46	6·6	—	1	—	—	1	—	8	10	1·4	77	11·1
Lewisham	161,406	—	16	14	—	2	—	1	3	—	—	36	2·9	—	1	—	1	2	—	7	11	0·9	130	10·5
Woolwich...	131,942	—	16	29	—	2	—	2	1	1	—	51	5·0	—	—	1	4	2	—	12	19	1·9	94	9·3
Port of London ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

and Greenwich. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1179, 918, and 886 at the end of the three preceding months, numbered 1051 at the end of September; the weekly admissions averaged 166, against 165, 122, and 107 in the three preceding months. The prevalence of enteric fever was about equal to that in the two preceding months; of the 28 cases notified in September, 5 belonged to Islington, 5 to Wandsworth, and 2 each to Paddington, Fulham, Hackney, Greenwich, Lewisham, and Woolwich. There were 43 cases of enteric fever under treatment in the Metropolitan Asylums Hospitals at the end of the month, against 40, 23, and 32 at the end of the three preceding months; the weekly admissions averaged 6, against 6, 4, and 6 in the three preceding months. Erysipelas was proportionally most prevalent in St. Pancras, Islington, Finsbury, Bethnal Green, and Southwark. The 10 cases of puerperal fever notified during the month included 3 in Hackney and 2 in Woolwich. Of the 8 cases of cerebro-spinal meningitis 2 belonged to Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ended Sept. 28th the deaths of 3537 London residents were registered, equal to an annual rate of 11·4 per 1000; in the three preceding months the rates had been 11·8, 14·8, and 10·1 per 1000. The death-rates ranged in September from 6·5 in the City of London, 8·8 in Hampstead, 9·2 in the City of Westminster, 9·3 in Woolwich, and 9·9 in Stoke Newington, to 12·7 in St. Pancras, 12·8 in St. Marylebone, 13·7 in Bermondsey, 13·8 in Bethnal Green, 14·2 in Poplar, and 16·2 in Holborn. The 3537 deaths from all causes included 394 which were referred to the principal infectious diseases; of these, 18 resulted from measles, 9 from scarlet fever, 29 from diphtheria, 28 from whooping-cough, 7 from enteric fever, and 303 from diarrhœa and enteritis among children under 2 years of age. Among the metropolitan boroughs the lowest death-rates from these diseases were recorded in Paddington, Chelsea, the City of Westminster, St. Marylebone, Hampstead, and Stoke Newington; and the highest in Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, and Woolwich. The 18 deaths from measles were 19 below the average number in the corresponding period of the five preceding years, and included 6 in St. Pancras and 3 in Bermondsey. The 9 fatal cases of scarlet fever showed a decline of 2 from the average; of these, 3 deaths belonged to Lambeth. The 29 deaths from diphtheria were 10 less than the average, and included 4 in Stepney, 4 in Woolwich, 3 in Islington, and 3 in Poplar. The deaths from whooping-cough numbered 28, and showed a decline of 13 from the average; of these, 4 belonged to Islington, 3 to Bermondsey, and 3 to Battersea. The 7 fatal cases of enteric fever were one less than the average number; 2 deaths belonged to St. Pancras. The 303 deaths from diarrhœa and enteritis among children under 2 years of age were less than a half of the average; this disease was proportionally most fatal in Fulham, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London in September from these principal infectious diseases was 51 per cent. below the average.

(Week ended Oct. 12th, 1918.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at 16,500,000 persons, the annual rate of mortality was 15·1, against 11·4 and 12·6 per 1000 in the two preceding weeks. In London, with a population slightly exceeding 4,000,000 persons, the death-rate was 14·0, or 1·3 per 1000 above that recorded in the previous week; among the remaining towns the rates ranged from 4·7 in Gillingham, 5·4 in Barnsley and in Rhondda, and 6·2 in Ilford, to 33·5 in Birkenhead, 41·6 in Southampton, 43·4 in Exeter, and 44·1 in Portsmouth. The principal epidemic diseases caused 207 deaths, which corresponded to an annual rate of 0·7 per 1000, and included 96 from infantile diarrhœa, 49 from diphtheria, 22 from whooping-cough, 21 from measles, 15 from scarlet fever, and 4 from enteric fever. The deaths from diarrhœa, which had declined from 435 to 186 in the six preceding weeks, further fell to 96, and were 147 below the number registered in the corresponding week of last year; 30 deaths belonged to London, 7 to Liverpool, and 6 each to Birmingham and Sheffield. The 1148 cases of scarlet fever and 1182 of diphtheria under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital were 129 and 57 above the respective numbers remaining at the end of the previous week. The deaths from influenza in London numbered 80 against 17 in each of the two preceding weeks. The causes of 47 deaths in the 96 towns were uncertified, of which 12 were registered in Birmingham, 10 in Liverpool, 5 in Walthamstow, and 3 in Leicester.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2,100,000 persons, the annual rate of mortality, which had increased from 10·6 to 19·0 in the four preceding weeks, further rose to 21·7 per 1000. Of the 1141 deaths from all causes, 45 were classified to influenza, which was also stated as a contributory cause in 359 deaths classified to other diseases; in the previous week these numbers were 35 and 159 respectively. The 767 deaths in Glasgow corresponded to an annual rate of 35·9 per 1000, and included 11 from whooping-cough, 5 from infantile diarrhœa, 4 from diphtheria, and 1 from measles. The 74 deaths in Edinburgh were equal to a rate of 11·6 per 1000, and included 3 each from scarlet fever and diphtheria, 2 from infantile diarrhœa, and 1 from measles.

Irish Towns.—The 188 deaths in Dublin corresponded to an annual rate of 24·6, or 3·3 per 1000 above that recorded in the previous week, and included 7 from infantile diarrhœa, and 1 each from enteric fever, scarlet fever, and diphtheria. The 106 deaths in Belfast were equal to a rate of 14·1 per 1000, and included 4 from infantile diarrhœa and 1 each from enteric fever and measles.

BRITISH HOSPITALS ASSOCIATION.—A conference will be held at St. Thomas's Hospital, London, to-day (Friday, Oct. 18th) at 3 P.M. to consider the proposal to create a Ministry of Health, in its relation to the voluntary hospitals. Lord Sandhurst will preside.

Obituary.

ALFRED HUME GRIFFITH, M.D. EDIN., D.P.H. CAMB.,

SUPERINTENDENT OF THE LINGFIELD COLONY FOR EPILEPTICS.

Dr. Alfred Hume Griffith, whose death occurred at the early age of 43 years, was second son of the late Rev. Edward Moule Griffith, and received his preliminary education at Persse School, Cambridge, and at Totnes and Bedford Grammar Schools. The missionary spirit took hold of him in the earlier years of his manhood; and it was in order to fit himself to be of service to others that he decided to enter the medical profession. With this intent he matriculated at Edinburgh in 1893, graduating M.B., Ch.B. six years later. In 1900 he married Mary, daughter of George Welchman, of Cullompton, and went out to take temporary charge of the Persian medical mission work at Ispahan. His pioneer work in Kerman, relinquished with reluctance on account of his wife's ill-health, was successful in breaking down hostile fanaticism of a kind which has often cost the lives of those who faced it. After a year in charge of the Medical Mission at Yezd Dr. Griffith finally left Persia in 1903, and after a short furlough, largely spent in study at Edinburgh (during which he took his M.D. degree), he offered himself for work in Palestine, and was appointed to the C.M.S. Hospital at Nablus, obtaining, while passing through Constantinople, the Turkish certificate enabling him to practise medicine throughout the Turkish Empire. In 1904 he moved on to Mosul in Mesopotamia and founded a hospital, where, assisted only by native men whom he himself had trained, he performed a large amount of surgical work. A collection of urinary calculi was presented by him to the Museum at Cambridge. But his strength proving unequal to the great strain thus made upon it, he was invalided home in 1908.

After a period of further study, during which he obtained the Cambridge D.P.H., Dr. Griffith was appointed, in October, 1910, superintendent and medical officer of Lingfield Colony for Epileptics, one of the several homes established by the National Union for Christian Social Service. Although impaired health necessarily restricted his energies, he brought to this task a union of qualities exactly suited for the successful handling and treatment in colony life of a malady and temperament admittedly presenting peculiar difficulties. Himself of athletic instincts—he was an Edinburgh "blue" in football, and when abroad never so happy as in the saddle—he saw to it that his patients as far as possible lived an open-air life, abundantly supplied with occupation, recreation, and hobbies.

He was an omnivorous reader and kept himself abreast of medical research, his own powers of observation being displayed in the contributions he made to medical literature, including articles on Hereditary Factors in Epilepsy (1911), Mental Tests in Defective Children (1916), and a chapter on the Epileptic in Kelynack's "Human Derelicts." He also wrote the chapters on Medical Missions in his wife's book, "Behind the Veil in Persia and Turkish Arabia." Recently Dr. Griffith had been much occupied with the institutional treatment and training of discharged sailors and soldiers suffering from epilepsy by arrangement with the Ministry of Pensions. Experience has shown that this is a specially difficult problem, many of the men failing to realise their disability, and being, not unnaturally, impatient of prolonged treatment. But Dr. Griffith knew his men; he possessed the technical skill requisite to obtain insight into their individual peculiarities, and often into the origin of the latter; and his sympathy with them and determination to restore them to a normal civilian life engendered, besides affection, a loyalty to régime that explains much of his success. Apart from his special work, Dr. Griffith had many projects in view for the development of the Lingfield Colony's sphere of usefulness, and the carrying of these into effect will be the best tribute to his memory. He leaves a widow and a young daughter.

AT their meeting on Oct. 8th the Portsmouth town council resolved unanimously to raise the salary of their medical officer of health, Dr. A. Mearns Fraser, from £800 to £1000 per annum "in view of the satisfactory manner in which he has performed his duties during a period of 23 years."

Correspondence.

"Audi alteram partem."

WAR EMERGENCY FUND OF THE R.M.B.F.

To the Editor of THE LANCET.

SIR,—I am very glad that Sir W. Watson Cheyne has drawn attention (THE LANCET, Oct. 12th) to the urgent need of providing without delay help for the members of our profession who, on returning from the war, will have to start in practice anew. Some provision for the financial need has already been made. Two years ago the War Emergency Fund of the Royal Medical Benevolent Fund was started, and about £20,000 have already been collected and temporarily invested. This Fund has been raised to help those who are in financial difficulties as the result of their war service, and to assist them in re-starting in practice. It is obviously most desirable not to duplicate funds of this kind, and I venture to urge all those who are moved by Sir W. Watson Cheyne's appeal to rally to the support of the War Emergency Fund and send subscriptions to the treasurer, addressed to 11, Chandos-street, Cavendish-square, W. 1.

It is impossible to tell what amount of money will be needed; it is certain that we shall want much more than we have at present, and we are appealing now for a further £10,000. When our colleagues returning from the front need help to resume their civil work they will want it promptly and it must be ample in amount. We must be prepared with large funds, and there is no time to lose if we are to be ready for the emergency.—I am, Sir, yours faithfully,

ALFRED PEARCE GOULD.
Chairman of the War Emergency Fund Committee.

Queen Anne-street, W., Oct. 13th, 1918.

THE CAMPAIGN FOR THE PREVENTION OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—The American Commission for the Prevention of Tuberculosis in France (the Rockefeller Foundation) has organised a very successful campaign against tuberculosis among the civil population in France by means of dispensaries, caravans, lectures, cartoons, and similar propaganda. Professor Selskar M. Gunn, one of the Associate Directors of the above Commission, will give a lecture, illustrated by lantern slides, at the annual meeting of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, on Tuesday, Oct. 29th, at 4 P.M., in the Large Hall, 20, Hanover-square, W. He will show the methods the Commission is using in France, which should be very interesting to us in this country.

Anyone wishing to attend the meeting should apply to the secretary of the National Association for the Prevention of Consumption and Other Forms of Tuberculosis, 20, Hanover-square, W. 1, for a ticket.—I am, Sir, yours faithfully,

J. J. PERKINS,
Hon. Secretary.

Oct. 15th, 1918.

MEDICAL MEN IN PARLIAMENT: SIR WILMOT HERRINGHAM'S CANDIDATURE.

To the Editor of THE LANCET.

SIR,—I see that a meeting has been held, under the chairmanship of Sir Henry Morris, to promote the candidature of medical men in the coming General Election. It will be important to have doctors in Parliament in view of the many questions which will press for attention concerning the prevention of disease and of infant mortality, sanitary housing, the treatment of the sick, and the establishment of disabled soldiers in suitable positions. The creation of a Ministry of Health and the proper position of medical advisers in local administration are equally important topics. It has been pointed out that the Universities are specially suitable for our candidates, since they are, or should be, more free than other constituencies from a narrow party spirit.

On these grounds I have accepted an invitation to stand for the University of London at the coming election.

I am, Sir, yours faithfully,

W. P. HERRINGHAM,
Major-General (Temp.); Consulting Physician to the Forces in France.

G.H.Q., France, Oct. 14th, 1918.

MEDICAL MEN IN PARLIAMENT.

To the Editor of THE LANCET.

SIR,—Will you allow me to say that I am in entire agreement with Lieutenant-Colonel M. A. Collins's suggestion (THE LANCET, Oct. 12th) that the Medico-Psychological Association should be represented on the Executive Committee formed on Oct. 1st "to further the election of medical men to the House of Commons." I know well the importance of that branch of medicine in its relation to State legislation, and I will take the first available opportunity to endeavour to attain his object. When Colonel Collins raised the question it was getting very late, the meeting had lasted considerably over two hours and was beginning to disperse, and I wished to avoid the risk of prolonged delay and discussion which similar suggestions made by members specially interested in other branches of medicine and surgery would certainly have caused.

I am, Sir, yours faithfully,

HENRY MORRIS.

Cavendish-square, London, W., Oct. 14th, 1918.

To the Editor of THE LANCET.

SIR,—Can anyone inform me why in the recently formed committee for "taking such steps as may be possible to further the election of medical men to the House of Commons," there is no representative of the Society of Apothecaries?—I am, Sir, yours faithfully,

WILLIAM H. KESTEVEN, L.S.A.

Kingston Hill, Surrey, Oct. 12th, 1918.

NOTIFICATION OF INDIGENOUS MALARIA.

To the Editor of THE LANCET.

SIR,—I should like to add a word to Professor Arthur Hall's letter of warning in your issue of Oct. 12th concerning the introduction of malaria into this country. Hitherto cases of malaria have been comparatively few, and the chance, therefore, of any given anopheline mosquito coming into contact with any given case has been somewhat remote. The conditions are now, or will shortly be, greatly changed; and I am under the impression that people generally are not fully alive to the very wide distribution of the anopheline group of mosquitoes in these islands.

During the past two years I have paid considerable attention to this subject in my own district, and have discovered that in the woods and river valleys in the eastern portion of this county anophelines are readily to be found, most commonly *A. maculipennis;* but this summer I have also found colonies of *A plumbeus*, and it is quite certain that the south-eastern portion of England is the normal habitat of a large number of anopheline mosquitoes, as is shown in the British Museum map, which probably understates the case owing to paucity of observers. I regret that the limitation of petrol has this year circumscribed my own observation to a much narrower field.

I am, Sir, yours faithfully,

JAMES R. WHITWELL.

St. Audry's Hospital, Melton, Suffolk, Oct. 14th, 1918.

CHRONIC INTESTINAL STASIS.

To the Editor of THE LANCET.

SIR,—I can lay very little claim to the title of anatomist, and none at all to that of anthropologist. I am, therefore, clearly not in a position to discuss with Captain F. Wood-Jones the interesting question as to whether or not the Hominidæ ever passed through a quadrupedal stage. I was taught that they did, but that proves nothing.

In the matter of "the damnable heritage of the colon," however, I crave a further word. If I have correctly understood your correspondent, he maintains that the short colon of the carnivora is adapted to the discipline of fasting, and the long colon of the herbivora to the otiose absorption of raw vegetables. I am quite content to take it at that. Now, man is furnished with a very long colon; but, in flagrant contravention of the formula, he eats flesh foods. Moreover, he cooks these flesh foods. He also cooks his vegetables, and mainly in such a manner as completely to destroy their vitamines. Such a degree of civilisation in matters dietetic may be very æsthetic, but it is obviously unsuited to the colon with which Providence has provided him. His colon, therefore, gives him very serious trouble. If he would avoid this trouble he must select one of two alternatives. He must either adapt his diet to his colon, or he must adapt his colon to his diet. The first he can do by confining himself to raw vegetables; the second he can accomplish either by fasting or by having his colon shortened. He declines to live entirely on raw vegetables; and, having tried it, I cannot find it in me to blame him. The decision between fasting and colon removing is a mere matter of taste. Personally, I prefer the former.

I am, Sir, yours faithfully,

Harley-street, W., Oct. 12th, 1918. LEONARD WILLIAMS.

SENSORY CHANGES IN THE DIAGNOSIS OF TRENCH FEVER.

To the Editor of THE LANCET.

SIR,—The paper by Major Carmalt Jones in your issue of Oct. 5th is of very great interest. He has placed in our hands a helpful method of retrospective diagnosis of the original cause of much "debility." It would be interesting to know whether the absence of areas of increased sensitiveness in 20 per cent. of his series of 500 cases was ever associated with the presence of analgesic patches. Since my attention was called to such cases by Captain J. A. Hartley, R.A.M.C.(T.), I have investigated a large number and have found that it is quite common for men in the middle and later stages of the disease to have areas of analgesia to pin-prick. This loss of sensibility varies in degree from a mere blunting of sensation to complete analgesia. The most common situations for this phenomenon are the outer surface of the calf, the infrapatellar, scapular, and deltoid regions; it has not been found in the skin of the face, neck, or trunk. Circumstances have prevented investigation of the total duration of this sensory loss, but it has sometimes been found five weeks after the onset of the disease, and may still be present in a proportion of chronic cases readmitted to hospital from convalescent camps.

I am, Sir, yours faithfully,

C. E SUNDELL,

France, Oct. 9th, 1918. Captain, R.A.M.C.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations recently held the following candidates were successful in the subjects indicated:—

PRIMARY EXAMINATION, PART II.

Anatomy.—J. W. Aden, Oxford; A. B. Aldred, Guy's Hosp.; M. Bulwski, London Hosp. F. J. Darbyshire, King's Coll. Hosp.; G. Fraser-Smith, Middlesex Hosp.; E. W. Hicks, St. Thomas's Hosp.; R. J. Hooker, Guy's Hosp.; C. F. Long, Bristol; and A. Senn, London Hosp.

Physiology.—A. B. Aldred, Guy's Hosp.; M. Bulwski, London Hosp.; H. V. Croucher, Guy's Hosp., F. J. Darbyshire, King's Coll. Hosp.; R. Erskine Gray and E. W. Hicks, St. Thomas's Hosp.; R. J. Hooker, Guy's Hosp.; C. F. Long, Bristol; and A. Senn, London Hosp.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Queen Anne's Gate Buildings, Westminster, on Oct. 10th, with Sir Francis H. Champneys in the chair.—A letter was considered from the Local Government Board asking the Central Midwives Board to consider the advisability of framing a new Rule E. 22 (1) (*f*) in terms similar to the corresponding rule of the Central Midwives Board for Scotland, which requires a midwife to notify the local supervising authority in the following case—"(*f*) "Artificial feeding"—whenever under Rule 19 (*b*) she has advised the substitution of artificial feeding for breast feeding. The Board decided that the question be adjourned to the next meeting of the Board.—A letter was considered from the medical officer of health for the county of Durham asking whether the Board would object to the County Council supplying midwives within their jurisdiction with collosum argentum for the treatment of the eyes of newly born infants. The Board decided that the medical officer of health for the county of Durham be informed that the Board has designedly refrained from recommending in the rules the use of any specific drug for the treatment of the eyes of newly born infants. It sees no objection to the course proposed by the medical officer of health for the county of Durham.—A letter was considered from the acting county medical officer of health for the West Riding of Yorkshire bringing to the notice of the Board a scheme of maternity

and child welfare now in course of organisation by the county council of the West Riding, and asking the Board to approve S. Faith's Rescue and Maternity Home, Leeds, as a branch of the West Riding Nurses' Home with a view to enabling the latter institution to utilise for the training of its pupils the midwifery cases undertaken by the midwives at S. Faith's. The Board decided, in view of the altered condition of the circumstances set forth in the letter of the acting county medical officer, to consider an application for approval to train pupil midwives from the lady superintendent or matron (being certified midwives) of S. Faith's Rescue and Maternity Home, Leeds, provided that the whole of the attendance on labours of such pupils is not carried out at the home.

LONDON HOSPITAL MEDICAL COLLEGE.—The "Price" and Entrance Scholarships in Science (value £100 and £50 respectively) have been divided between G. N. Golden, J. H. Andre, and K. W. Todd.

A COURSE of three public lectures on "France's Share in the Progress of Science" will be delivered at University College on Tuesdays, Oct. 22nd and 29th and Nov. 5th, at 5 P.M., by M. Henri L. Joly, Professeur de Sciences Physiques et Naturelles au Lycée Français (Institut Français du Royaume Uni). The chair will be taken at the first lecture by Professor J. Norman Collie, D.Sc., F.R.S. A leaflet containing full particulars of the lectures may be obtained by sending a stamped addressed envelope to the Publications Secretary, University College, London (Gower-street, W.C. 1).

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee, held on Oct. 8th, 21 cases were considered and £205 1*s.* voted to 16 of the applicants. The following is a summary of some of the cases relieved:—

L.R.C.S. Irel., aged 72, married, who practised at Retland, Bristol. Owing to ill-health quite unable to practise, and has no savings. Only income interest on £500 on deposit at the bank. This was received from insurance on the death of his son. Voted £26 in 12 instalments.—Widow, aged 57, of M.B. Glasg. who practised in South Wales and died in August, 1918. Applicant was left unprovided for at her husband's death. Has three children, son 24, and twin daughters aged 22. Rent £30. Voted £5.—Widow, aged 70, of L.R.C.P. Edin. who practised at Bervie and died in June, 1918. Applicant's husband had been helped by the Fund for the last two years. She is now a confirmed invalid, and her only income is occasional gifts from her two children. Rent £14. Voted £12 in 12 instalments.—Daughter, aged 61, of M.R.C.S. Eng. who practised at Wymondham and died in 1870. Applicant lost all her income through a defaulting trustee, and a lady who helped her has recently died. Lives with a family who provide board, but no pay. Relieved ten times, £64. Voted £12 in 12 instalments.—Wife, aged 39, of M.R.C.S. Eng. who practised at Bournemouth and is now in an asylum. Applicant is suffering from tuberculosis. Has two children, now aged 17 and 12, living with relations, who also provide for her husband's maintenance. Relieved five times, £67 10*s.* Voted £12 in six instalments.—Daughter, aged 50, of M.D. Edin. who practised at Southampton and died in 1886. Applicant is a trained midwife, but owing to ill health is unable to follow her occupation. Friends provide 12*s.* 6*d.* per week, but this is insufficient to pay for board and lodging. Relieved five times, £36. Voted £12 in 12 instalments.—Daughter, aged 52, of M.D. Glasg. who practised at Glasgow and died in 1897. Applicant used to earn a little as housekeeper, but owing to the severe illness of her invalid mother, aged 78, has had to give up work to attend to her. Relieved four times, £40. Voted £10.—Widow, aged 73, of L.R.C.S. Irel. who practised at Walworth and died in 1915. Was left entirely without means. Receives Old Age Pension, £7 16*s.* Eldest daughter allows 2*s.* 6*d.* per week, and youngest daughter, who earns 35*s.*, lives with mother. Relieved four times, £38. Voted £12 in 12 instalments.—Widow, aged 82, of M.R.C.S. Eng. who practised at Woodford, Essex, and died in 1913. Applicant was left without means, and friends subscribed to a fund, but this is now almost exhausted. Has four children, son, aged 47, and daughter, married, unable to help. Daughter, aged 45, is at home looking after mother, and daughter, aged 43, a munition worker, earns 35*s.* and pays 15*s.* per week towards household expenses. Relieved once, £18, in September, 1913. Voted £18 in 12 instalments.

Subscriptions may be sent to the acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos-street, Cavendish-square, London, W. 1.

CAMBRIDGESHIRE TUBERCULOSIS COLONY.—On Oct. 9th the Queen, accompanied by Princess Mary, paid a visit to the Tuberculosis Sanatorium, Papworth Hall, Cambridge, inspecting, as well as the central institution, the workshops where the open-air shelters are being constructed and the cottages in the village which are occupied by ex-patients employed in various ways on the estate. Before leaving the Queen intimated to Colonel Sims Woodhead her intention of sending a contribution of £1000 for the purchase of more cottages. Among those present were the Lord Lieutenant of Cambridgeshire, the High Sheriff, the High Steward, the Mayor, the Acting Vice-Chancellor, Dr. T. N. Keynes (the Registrary of the University), Mr. J. F. P. Rawlinson, M.P. (the Recorder), Sir Clifford Allbutt (Regius professor of physic), and Sir Arthur Newsholme, representing the Local Government Board. The colony, originally started at Bourne in January, 1916, was removed to Papworth Hall in February of the present year, Sir Ernest Cassel having given £5000 towards the expansion of the institution. Property was acquired which extended the estate to nearly 100 acres, and the Ministry of Pensions offered £3000 for a lien on 30 beds during the war and 10 beds for a later period. There are now 50 patients in residence, under the charge of Mr. P. C. Varrier-Jones, honorary resident medical officer, but further extensions in accommodation are to be made in consequence of a gift of £10,000 from the National Relief Fund. A special feature of the colony is its industrial side, the ex-patients carrying on various trades in the open air, and it is hoped that gradually a self-supporting village community may be built up around the central institution. For the completion of the work of the institution already undertaken by the committee £7000 is still required.

DONATIONS AND BEQUESTS.—By the will of the late Mr. Alfred Ridley Bax, F.S.A., the Royal Hospital for Incurables will receive £1000.—The late Major-General William Henry Knight left by will £500 to the Royal Victoria Hospital, Dover.

ANNUAL MEDICAL SERVICE AT LIVERPOOL.—The service was held as usual at the church of St. Luke on Oct. 13th, and was attended by the Lord Mayor (Major J. Utting, R.A.M.C.) in state, Professor W. Thelwall Thomas, President of the Liverpool Medical Institution, and a number of leading medical men. The collection, on behalf of the Royal Medical Benevolent Fund, realised the record amount of £130, a result largely due to the efforts of the Lord Mayor, who collected a considerable amount before the date.

LITERARY INTELLIGENCE.—The Library Press, Ltd., London, hope to publish within a week or two a translation of Professor Jules Amar's book on "The Physiology of Industrial Organisation and the Re-employment of the Disabled." The translation has been made by Mr. Bernard Miall, and has been edited, with notes and an introduction, by Professor A. F. Stanley Kent, M.A., D.Sc. Oxon. We reviewed the French edition of this book in THE LANCET of April 21st, 1917.

NEW CONVALESCENT HOME IN DEVON.—A convalescent home for 20 delicate children was formally opened on Oct. 9th at Dousland. Mrs. Waldorf Astor has provided the home, which stands in pleasant grounds on the borders of Dartmoor. The institution is intended for children from Plymouth, and Mrs. Astor will defray all expenses for the first two or three years. The honorary physician is Dr. John G. Bailey, and the honorary surgeon Mr. George Jackson.

OLD-AGE PENSIONERS AND WORKHOUSE TREATMENT.—The Helston (Cornwall) board of guardians has been informed by the Local Government Board that in the case of old-age pensioners admitted to the workhouse infirmary, if the pension officer was satisfied that this admission was principally due to the need of medical treatment, the pension would be continued, but if the pensioner had become a chronic inmate of the infirmary the question of disqualification could be raised by the Local Pensions Committee.

THE SERVICES.

ARMY MEDICAL SERVICE.

Cols. T. G. Lavie and J. Girvin retire on retired pay.

ROYAL ARMY MEDICAL CORPS.

Lieut.-Col. S. H. Withers retires on retired pay.

Major (Bt. Lieut.-Col.) B. A. Craig to be acting Lieutenant-Colonel whilst in command of a Medical Unit.

Major M. C. Wetherell relinquishes the acting rank of Lieutenant-Colonel on re-posting.

Capt. Sir T. C. English, R.A.M.C. (T.F.) (hon. Col. in Army), to be temporary Lieutenant-Colonel whilst specially employed.

Temp. Capt. (acting Lieut.-Col.) F. W. G. Deane relinquishes his acting rank on ceasing duty at Leith War Hospital.

The undermentioned to be acting Lieutenant-Colonels: Temp. Major (Capt., R.A.M.C. (T.F.)) W. Robertson; whilst in command of a Medical Unit: Capt. (acting Major) S. D. Large, Capt. (acting Major) H. A. Harbison.

Temp. Capts. relinquishing the acting rank of Major: E. W. Craig, W. K. A. Richards; on re-posting: T. E. R. Branch, K. B. Dickson, G. W. Stone.

To be acting Majors: Temp. Major P. Turner; Capt. (Brevet Major) H. F. Panton; Temp. Capts. J. N. Wheeler, G. Jackson, A. L. Krogh, H. V. Leigh, F. P. Joscelyn, R. S. Scott, E. C. Lindsay, T. H. Just, V. F. Soothill, T. A. Lawder, H. F. N. Scott, H. Pringle, A. Manuel, P. Moran; Temp. Lieut. G. B. Warburton. Whilst specially employed: Temp. Capts. R. C. Harkness, J. Donald, J. L. Rankine, C. C. de B. Daly, F. McE. Sinclair and H. Whitwell, late temporary Captains, are granted the honorary rank of Captain.

R. P. Mitchell to be temporary Honorary Captain whilst serving with British Red Cross Society in France.

Officers relinquishing their commissions: Temp. Major R. O. Moon; Temp. Capts. J. A. A. Orlebar, W. Dickson, E. V. Frederick, H. F. Wickens, F. C. Stewart, R. B. Johns (on account of ill-health contracted on active service, and is granted the honorary rank of Captain), W. M.

Fergusson (on account of ill-health, and is granted the honorary rank of Captain), W. S. Foote, E. Macmillan, G. A. Barss, C. G. Shearer (on account of ill-health contracted on active service, and is granted the honorary rank of Captain), J. G. Reidy (on account of ill-health contracted on active service, and is granted the honorary rank of Captain); Temp. Hon. Capt. F. W. Goyder (on ceasing to be employed with St. John Ambulance Brigade Hospital); Temp. Lieuts. F. Spearing (on account of ill-health contracted on active service, and is granted the honorary rank of Lieutenant), A. C. Norwich (on account of ill-health caused by wounds, and is granted the honorary rank of Lieutenant), W. S. Gibson (on account of ill-health, and is granted the honorary rank of Lieutenant), C. J. G. Exley (on account of ill-health); Temp. Hon. Lieut. H. E. Durham (having ceased to be employed with Welsh Hospital, Netley).

Canadian Army Medical Corps.

Temporary Captains to be temporary Majors): D. B. Kennedy, J. A. Briggs, H. Hart.

Temp. Capt. J. McCulloch to be acting Major while employed at Canadian Depôt.

Temporary Captains to be acting Majors while employed at a Canadian Field Ambulance: H. M. Barrett, F. W. Lees, E. Douglas, L. C. Palmer.

SPECIAL RESERVE OF OFFICERS.

Capts. M. W. Ruthven and S. J. Steward relinquish the acting rank of Major on re-posting.

Capt. D. M. Marr to be acting Major.

Capt. H. Taylor relinquishes his commission on account of ill-health, and is granted the honorary rank of Lieutenant.

TERRITORIAL FORCE.

Lieut.-Col. O. E. B. Marsh is retired, having attained the age limit, and is granted the honorary rank of Lieutenant-Colonel.

Major J. Allison to be acting Lieutenant-Colonel whilst specially employed.

Major A. V. Ford relinquishes his commission on account of ill-health, and is granted the honorary rank of Major.

Capts. H. E. Gibson (General List) and W. Malden relinquish their commissions on account of ill-health, and are granted the honorary rank of Captain.

Capt. (acting Major) M. U. Wilson (General List) relinquishes his acting rank on ceasing to be specially employed.

Captains to be acting Majors whilst specially employed: W. E. H. Bull, F. J. Green, W. J. Gray, A. R. Muir.

Capts. J. B. Macalpine and W. Gough are restored to the establishment.

Lieuts. L. H. Callendar and C. P. Matthews to be Captains.

TERRITORIAL FORCE RESERVE.

Capts. J. A. Menzies and A. R. Moodie, from R.A.M.C., to be Captains.

ROYAL AIR FORCE.

Medical Branch.—J. Maclaughlin (Lieut.-Col., retired, R.A.M.C.) is granted a temporary commission as Captain and to be honorary Lieutenant-Colonel. H. McWilliam Daniel, M. Murphy, W. Lessey (late Captain, R.A.M.C.) are granted temporary commissions as Captains. F. S. Drewe, A. Henderson, T. Acton, O. Hilton are granted temporary commissions as Lieutenants.

Dental Branch.—R. C. T. Evetts, N. A. Goudge, A. E. F. Peaty, F. J. Bradburn are granted temporary commissions as Lieutenants.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.
A System of Clinical Medicine. By T. D. Savill, M.D. 5th ed. 28*s.*

BAILLIÈRE, TINDALL, AND COX, London.
Lessons on Massage. By Margaret Palmer. 5th ed. 10*s.* 6*d.*
Manual of Physiology, with Practical Exercises. By C. N. Stewart, M.D. 8th ed. 21*s.*

CLARENDON PRESS, Oxford.
Dr. John Radcliffe: A Sketch of His Life, with an Account of His Fellows and Foundations. By J. B. Nias, M.D. 12*s.* 6*d.*

HEINEMANN, WILLIAM, London.
Studies in Word Association. By C. G. Jung, M.D. Translated by Dr. M. D. Eder. 25*s.*

HOEBER, PAUL B., New York
Neurological Clinics: Exercises in the Diagnosis of Diseases of the Nervous System given at the Neurological Institute, New York, by the Staff of the First Division. Edited by J. Collins, M.D. $3.

KIMPTON, HENRY, London.
Tropical Surgery and Diseases of the Far East. By J. R. McDill, M.D. 24*s.*

LONGMANS, GREEN, AND CO., London, New York, and India.
Simplified Methods of Tracing Rays Through any Optical System of Lenses, Prisms, and Mirrors. By L. Silberstein, Ph.D. 5*s.*
New Reduction Methods in Volumetric Analysis. By E. Knecht, M.Sc., and Eva Hibbert, M.Sc. 5*s.*
The Chemistry of Synthetic Drugs. By P. May, D.Sc. 2nd ed. 10*s.* 6*d.*

OXFORD PRESS WAREHOUSE, London.
A Text-book for Midwives. By J. S. Fairbairn, B.M. 2nd ed. 2*s.*

SAUNDERS (W. B.) COMPANY, London and Philadelphia.
Gynecology. By William P. Graves, M.D. 2nd ed., thoroughly revised. $7.75.
Surgical Treatment: a Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M.D. (Three Vols. and Index Vol. $30.) Vol. I.
Military Hygiene and Sanitation. By Frank R. Keefer, M.D., Colonel, Medical Corps, United States Army. 2nd ed., reset. $1.75.
The Orthopædic Treatment of Gunshot Injuries. By Leo Mayer, M.D. Introduction by Colonel E. G. Brackett, M.C. $2.50.

UNIVERSITY PRESS, Cambridge.
War Neuroses. By J. T. MacCurdy, M.D. Preface by W. H. R. Rivers, M.D. 7*s.* 6*d.*

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Parliamentary Session.

BOTH Houses of Parliament resumed on Tuesday, Oct. 15th, after a recess extending from the beginning of August.

HOUSE OF COMMONS.

TUESDAY, OCT. 15TH.

The Midwives Bill.

Mr. HAYES FISHER (President of the Local Government Board), in moving the second reading of the Midwives Bill, said that the measure had originally been introduced and passed in the House of Lords. When, however, it came down to the House of Commons a lynx eye discovered that there was a flaw in it. It infringed the privilege of the House of Commons inasmuch as some of its clauses made a charge on public funds. This being the case there were three courses open: first, to reintroduce the Bill in the House of Lords without the offending clauses; secondly, to introduce the Bill into the House of Commons with the clauses which created the charge; and thirdly, to drop the Bill. At that time—late in July—the Chancellor of the Exchequer, who was responsible for the conduct of the business of the House, was beginning the slaughter of the innocents, and there was no time for the Bill to be considered in the House of Commons. Therefore there was only one course to take—namely, to drop the Bill for the time, with the intention of introducing it into the House of Commons at the earliest possible date. The Midwives Act of 1902 only applied to England and Wales, and not to Scotland or Ireland. The two latter countries obtained some advantages in that respect, because a Departmental Committee which was appointed to inquire into the operations of the 1902 Act made certain valuable recommendations regarding amendments which might fittingly be made in the Act. Since Scotland and Ireland had obtained Midwives Acts in which those recommendations were incorporated England and Wales had become the Cinderella of midwives legislation, and the whole object of the present Bill was to assimilate the law relating to midwives, so that the whole legislation on the subject throughout the United Kingdom would be in harmony. Proceeding to mention one or two of the more important clauses, Mr. Hayes Fisher said that Clause 2 made arrangements for a more equitable apportionment regarding any deficit which might accrue to the local authorities. The apportioning of the deficit was made on the basis of the population, and not on the basis of the number of midwives who had taken out certificates. The old apportionment was somewhat cumbersome and inequitable. Those local authorities which were most active in promoting the work of the midwives were to a certain extent penalised by having to take upon themselves a larger proportion of the deficit than they ought to have done. Under Clause 6 compensation was introduced for the first time to women who had been suspended through no fault of their own. Clause 8 provided that a woman struck off the Roll should return her certificate to the Board. By Clause 10 there would be reciprocal recognition of the certificate of the Central Midwives Board not only in the United Kingdom, but in the British Dominions, with the proviso that the term of training must be the same in each case. Clause 12 enabled the county council to delegate its duties to the district council except in cases where that power had already been exercised. This was the only clause on which there was division of opinion in the House of Lords, and it was quite possible that division of opinion might manifest itself on that clause in the House of Commons when the Bill went into Committee. Clause 14 made it obligatory to summon a medical man in emergency cases and for the local authority to pay his fee. They would be able to recover 50 per cent. of these fees from grants made by the Treasury under the administration of the Local Government Board. Everyone must be anxious at this time to do all they could in relation to maternity and child welfare. There was a great shortage of midwives at the present time, and if they could do anything to raise their status and remove the difficulties under which they worked they were doing something at all events to diminish the perils of motherhood and to ensure that a better class of woman would take up the ancient and honourable profession of a midwife.

Replying to a number of questions, Mr. HAYES FISHER said that it would be possible to increase the number of women on the Central Midwives Board. It would be possible, if it was found desirable, to give midwives themselves direct representation on that Board. The Government had thought it better to bring in the Bill as it left the House

of Lords, but when they came to Clause 12, which was probably the only one which would excite any debate or division, he would listen with a very open mind to the arguments put forward as to whether or not the delegating of powers should be allowed. But he thought that it would be wise to give a discretionary power to the Local Government Board and not to close the door entirely to delegation and matters of that kind.

The Bill was read a second time.

Appointments.

DEAN, L. T., M.B. Cantab., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Spilsby District of Lincoln.

O'DONNELL, P. C., M.B., B.Ch., Certifying Surgeon under the Factory and Workshop Acts for the Dingle District of the County of Kerry.

Vacancies.

For further information refer to the advertisement columns.

Alnwick Infirmary.—H.S. £150.

Barrow-in-Furness, County Borough.—Female Asst. M.O.H. and Asst. Sch. M.O. £450.

Bradford.—Temp. Asst. Sch. M.O. £8 8*s.* per week.

Bristol Royal Infirmary.—H.P. and H.S. £120.

Burton-on-Trent Infirmary.—H.S. £200.

Cambridge, Addenbrooke's Hospital.—H.P. £300.

Cambridge Borough Education Committee.—Asst. Sch. M.O. £400.

Chester Royal Infirmary.—H.S. £200.

Chesterfield and North Derbyshire Royal Hospital.—Sen. H.S. £300.

Exminster, Devon Mental Hospital.—L.T. 7 gs. per week.

Grimsby and District Hospital.—Res. H.S. £200.

Hastings, East Sussex Hospital.—H.S. £250.

Huddersfield County Borough.—Female Asst. M.O.H. £400.

Kent, Bromley Union Guardians' Institution, Farnborough.—M.O. £250.

Kirkburton, Storthes Hall Asylum, Huddersfield.—L.T. £7 7*s.* per wk.

Leicester, Leicestershire County Council Education Committee.—School Dentist, £400.

Manchester, Crossley Sanatorium, Delamere Forest, Cheshire.—Asst. M.O. £300.

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—H.S. £150.

National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—Res. M.O. Also Jun. H.P.

Newcastle-upon-Tyne, Royal Victoria Infirmary.—Asst. Res. M.O. £250. Also H.P.s. and H.S.s. £50, and (in one case) £100.

Newcastle-upon-Tyne, University of Durham College of Medicine.—Lect. Psych. Med.

Northampton General Hospital.—Jun. H.S. £150.

Plymouth, South Devon and East Cornwall Hospital.—H.P. £200.

Queen Charlotte's Lying-in Hospital, N.W.—Asst. Res. M.O. £60.

Reading, Royal Berkshire Hospital.—H.S. £250.

Roll of Honour Hospital for Children, 688, Harrow-road, W.—Female Asst. Phys.

Royal Free Hospital, Gray's Inn-road, W.C.—Paths. to Ven Dis. Dept. and to Military Sect. £150. Also Asst. Path. £250.

Royal London Ophthalmic Hospital.—Deputy Bacteriologist. £120.

Salford Royal Hospital.—H.P. £250. H.S. £200. Jun. H.S. £150.

Sheffield City Hospitals.—Asst. M.O.

Shrewsbury, Salop County Asylum.—Temp. Asst. M.O. £300.

South London Hospital for Women.—Female Clin. Asst. £1 1*s.* per attendance. Also Anæsth. 10*s.* 6*d.* per attendance

Wakefield, Clayton Hospital.—H.S. £250.

Winchester, Royal Hampshire County Hospital.—Sen. Res. M.O. £400.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Swaffham, Norfolk, and at Spennymoor, Durham.

Births, Marriages, and Deaths.

BIRTHS.

NEILD.—On July 13th, at 7, Love Lane, Shanghai, the wife of F. M. Neild, M.B., B.S. (Lond.)—a daughter.

RIDDELL.—On Oct. 14th, at Chalmers-street, Edinburgh, the wife of Captain (Acting Major) J. W. G. H. Riddell, M.C., R.A.M.C., T., of a son.

MARRIAGES.

ADDEY—WILSON.—On Oct. 7th, at Shepperton Parish Church, William Fielding Addey, Captain, R.A.M.C., to Edith Jane, daughter of the late James Wilson, of Alford, Aberdeenshire.

STALKER—MACLEAN MANSIE.—On Oct. 12th, at Dundee, Captain J. M. Stalker, R.A.M.C., to Jeannette Maclean Mansie, M.B., Ch.B.

DEATHS.

BIERNACKI.—On Oct. 11th, at the Hospital, John Biernacki, M.B., Physician-Superintendent of Plaistow Fever Hospital, and of 17, Wimpole-street, Cavendish-square.

McLAGGAN.—Killed in action on Oct. 4th, Captain J. Murray McLaggan, M.C., R.A.M.C., attached Royal Fusiliers, aged 27 years.

PRIESTLEY.—On Sept. 28th, at Salonika, of influenza, Major Percival T. Priestley, R.A.M.C.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.1.

MEETINGS OF SECTIONS.

Tuesday, Oct. 22nd.

MEDICINE

PATHOLOGY

EPIDEMIOLOGY: *Discussion* on "Epidemic Encephalitis," at 5.30 P.M. Speakers: Dr. F. W. Mott, Dr. S. P. James, Dr. A. S. MacNalty, Dr. W. H. Hamer, Dr. A. J. Hall, Dr. P. N. Panton, Dr. F. G. Crookshank, and others.

Wednesday, Oct. 23rd.

SURGERY (Hon. Secretaries—V. Warren Low, Cyril A. R. Nitch): at 6 P.M.

Presidential Address by Sir J. Bland-Sutton: Spolia Opima.

Friday, Oct. 25th.

STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—Eric Pritchard, H. C. Cameron, C. P. Lapage): at 4.30 P.M.

Cases will be shown.

Demonstration: Dr. K. S. Bhat: A New Counting Chamber for Cells, &c., in Fluids.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY, Oct. 25th.—5 P.M., Museum Demonstration:—Prof. A. Keith: The Physiological Effects of Massage and Gymnastics.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

Clinics each week-day at 2 P.M., Wednesday, Friday, and Saturday also at 10 A.M.

(Details of Post-Graduate Course were given in issue of Sept. 27th.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

Out-patients each day at 2.30 P.M.

ROYAL INSTITUTE OF PUBLIC HEALTH, in the Lecture Hall of the Institute, 37, Russell-square, W.C.

Course of Lectures on Public Health Problems under War and After-war Conditions (each Lecture will be followed by a Discussion):—

WEDNESDAY, Oct. 23rd.—4 P.M., Lecture III:—Dr. W. M. Willoughby: The Obviation of Ship-borne Infections.

CHADWICK PUBLIC LECTURES, at the Rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W.

Lectures on the Story of a New Disease (illustrated by epidiascope):—

THURSDAY, Oct. 24th.—5 P.M., Lecture III:—Dr. F. G. Crookshank: (1) Raphania; (2) Botulism; (3) Theory of the Heine-Medin Disease.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. W. H. B. Aikins, Toronto.

B.—Surg.-Gen. R. Blue, Washington; British Hospitals Association, Lond., Hon. Sec. of; Sir John Bland-Sutton, Lond.; Dr. C. H. Bond, Lond.; British Organotherapy Co., Lond.; Mrs. Cloudesley Brereton, Lond.; Dr. T. B. Broadway, Dorchester.

C.—Messrs. J. and A. Churchill, Lond.; Dr. A. B. Carver, Torquay; Rev. Dr. Corner, Abergavenny; Chicago School of Sanitary Instruction; Messrs. Clement and Johnson, Lond.; Dr. F. G. Crookshank, Lond.; Mr. J. Cabburn, Lond.; Miss M. M. Cashmore, Woolwich; Central Midwives Board, Lond., Sec. of; Dr. H. P. Cholmeley, Forest Row.

D.—Mr. S. H. Davey, Neath; Major H. Dutch, R.A.M.C.(T.); Surg. Lt. Comm. S. F. Dudley, R.N.

E.—Dr. W. Ewart, Lond.; Dr. A. D. Edwards, Bournemouth; Eagle, Star and British Dominions Insurance Co., Lond.

F.—Dr. R. Fenner, Lond.; Dr. W. M. Feldman, Lond.; Dr. A. M. Fraser, Portsmouth.

G.—Dr. D. Graham, Boston; Mr. H. J. Gauvain, Alton; Glasgow, Medical Officer of Health of; Miss L. Givens, Sheffield; Sir A. Pearce Gould, K.C.V.O., Lond.; General Medical Council, Lond., Acting Registrar of.

H.—Dr. I. Harris, Liverpool; Dr. J. B. Hurry, Reading; Rev. C. W. Heald, Chale; Dr. R. H. Hann; Major-Gen. Sir W. P. Herringham, C.B.

I.—*The India Rubber Journal*, Lond., Editor of.

J.—Rev. H. B. Jones, Hull; Mrs. J. A. Johnston, Dunbarton; Mr. C. L. Jenkins, Lond.; Mr. W. Jones, Liverpool.

K.—Mr. W. H. Kesteven, Kingston-on-Thames; Mrs. F. A. Keynes, Cambridge; Dr. H. C. Kidd, Bromsgrove.

L.—Dr. C. Lillingston, Peppard Common; Local Government Board, Lond.; London Dermatological Society, Hon. Sec. of.

M.—Ministry of Munitions of War, Lond.; Ministry of Food, Lond.; Sir Henry Morris, Bart., Lond.; Dr. Reginald Morton, Lond.

N.—National Baby Week Council, Lond., Sec. of; National Association for the Prevention of Consumption, Lond.

O.—Sir William Osler, Bart., Oxford.

P.—Major J. Phillips, R.A.M.C.; Capt. H. M. Perry, R.A.M.C.; Practitioner.

R.—Royal Medical Benevolent Fund, Lond., Sec. of; Dr. M. R. Rhodes, Lond.; Royal Albert Institution, Lancaster; Dr. R. R. Rentoul, Liverpool; Royal Microscopical Society, Lond.; Mr. S. H. Rouquette, Lond.

S.—Society of Apothecaries of London, Sec. of; Capt. C. E. Sundell, R.A.M.C.; Capt. J. L. Stoddard, M.C., U.S.A.; St. John's Hospital, Lond.; Dr. E. I. Spriggs, Banff; Dr. W. B. Sansom, Lond.; Dr. E. Stolkind, Lond.; Capt. A. R. Snowdon, R.A.M.C.

U.—University College, Lond., Provost of; University of Cambridge.

W.—Brig.-Gen. F. A. Winter, M.C., U.S.A.; Dr. L. Williams, Lond.; Dr. F. P. Weber, Lond.; Warrington, Medical Officer of Health of; Major R. B. Wild, R.A.M.C.(T.); Dr. F. G. Wallace, Lond.; Dr. J. R. Whitwell, Melton; Messrs. John Weiss and Son, Lond.; Lt.-Col. J. H. T. Walsh, I.M.S. (retd.)

Communications relating to editorial business should be addressed exclusively to The Editor of THE LANCET, 423, Strand, London, W.C. 2.

Notes, Short Comments, and Answers to Correspondents.

SOME EARLY BRITISH SURGEONS.

THE fifth volume of the *British Journal of Surgery* (Bristol: John Wright and Sons, Ltd. Pp. 714. Price 35s. 6d.) contains four articles dealing with one fourteenth century surgeon—namely, John Arderne, and three Tudor surgeons, John Banester, John Halle, and Thomas Vicary. John Banester, like his fellows Halle and Vicary, whose lives are given in the volume before us, and his other contemporaries, Gale, Clowes, and Read, were all Elizabethan surgeons, who strove to raise the status of surgery in England and to restrain quacks. They succeeded in their former effort to a very limited extent, but probably were not successful in the latter, although severe measures had been taken by the Act of 1531 against vagabondage, including "rogues who pretended to a knowledge of physic." Banester acted as surgeon to the Forces sent to relieve Havre in 1563, and in 1572 he was admitted a Member of the Barber Surgeons Company, apparently more owing to interest than to his undoubted merits. A note in the records of the Company says:—

"Mr. Banester, of Nottingham, was sworn and admitted a brother of this mystery. Whereupon he hath granted to the House yearly twenty shillings so long as he liveth, and to be liberal and commodious to this house in that he may and will yearly send a buck or two, and hath paid ten shillings and shall have his licence."

His biographer suggests that Banester's friendship with Clowes or his own family interest may have gained him admission to the Company, but we expect that the 20s. and the promise of the bucks had something to do with it too. In 1573 the University of Oxford granted him a licence in medicine, and in 1593 he received the licence of the Royal College of Physicians of London by desire of Queen Elizabeth. He was the Company's "Visceral Lecturer" in 1581, and an interesting picture (reproduced in the book) is extant of the proceedings at the lecture. From this picture we can get a very accurate idea of a demonstration in anatomy of the sixteenth century. It is pleasant to find from the records of the Company that provision was made for all things to be done decently and in order. Thus, the body was to be kept behind curtains until it "is wrought upon" (i.e., by the "Masters" or "stewards" of anatomy, who were apparently what are now called prosectors). The dissection being finished, all was to be made clean "and covered with fayre clothes" until the doctor should come to demonstrate. Both the doctor and the stewards were to have clean aprons and sleeves every day, and the latter were to see that all their instruments were clean. Banester died in 1610, so that at the date of this picture (1581) he was 48, having been born in 1533.

John Halle (1529–1568) was born in Maidstone. Little is known of him except from his books. Among these were a translation of Lanfranc's "Surgery" with a glossary, in which, concerning the word "algebra" we think he has made an error. He says:—

"The Arabye word 'algebra' signifieth as well fractures of bones, &c., as sometime the restauration of the same."

We do not think that the word "algebra" ever meant fracture, but was always used of bone-setting—i.e., restoration of fractures. "Algebra" is still used in Spanish to signify bone-setting, and the original Arabic word "al-jebr" means the reunion of broken parts. Halle also wrote a treatise against quacks in the vigorous English of his time, though not a whit too strong for the offences of "the beastly beguilers."

Thomas Vicary (1490–1562) was the leader of the band of Tudor surgical reformers. He was governor of St. Bartholomew's Hospital in 1548, with three surgeons under him. He is best known as the editor or author of a treatise on anatomy generally called "The Englishman's Treasure." The late Dr. J. F. Payne showed conclusively that this work is really an abridgment of a fourteenth century derivative of Lanfranc and Mondeville. It is not certain that Vicary claimed to be the author, and probably he simply edited the unknown fourteenth century author, just as Halle did Lanfranc.

John Arderne (1307–1380?) was the first English surgeon of whom we have any detailed knowledge. His chief work was a treatise on fistula in ano and its cure. His treatment was to make a clean incision instead of slowly cutting through the fistula with a ligature. The work has been admirably edited by Mr. D'Arcy Power for the Early English Text Society, Orig. Series 139, 1910.

The modern methods of surgery recorded in the *British Journal of Surgery*, especially the plastic variety, are so astounding that if their exponents had lived at the date of the surgery mentioned above they would have been burned as professors of diabolic arts.

ANTHROPOMETRY AND NATIONAL HEALTH.

THE first of a series of lectures on Public Health Problems under War and after War Conditions was delivered at the Royal Institute of Public Health on Oct. 9th by Professor Arthur Keith, F.R.S., his subject being Anthropometry and National Health. The chair was occupied by Major Leonard Darwin. Professor Keith said he did not believe the Prime Minister had done any greater service than when he drew attention in his speech at Manchester, on Sept. 12th, to the fact that if the health of the people had been looked after we should have been able to put into the fighting ranks at least a million more men, and the war would by that date have ended triumphantly. The first movement in this country to ascertain the physical condition of the people was made by a committee of the British Association in 1875, which in 10 years took measurements of 80,000 men, women, and children. After the Boer War General Maurice (Sir Frederick Maurice's father) stated, in an article in the *Contemporary Review*, that out of every five men who presented themselves for acceptance as soldiers only two were found fit to bear arms. A surgeon-general of the time, after investigating the recruiting statistics for 10 years, said they showed that of every 1000 men who applied to become soldiers 400 had to be rejected. On the initiative of General Maurice the Government appointed a departmental committee, which, after an eight months' inquiry, made a valuable report which recommended the setting up of machinery for investigation, but the report had been pigeon-holed. Conscription, however, had now placed us in possession of the figures in regard to the physical condition of the people. A population which deserved the term "healthy" ought to yield the following per 1000 men: 700 Grade I., 200 Grade II., 75 Grade III. (for sedentary work), and only 25 physically incapable. Yet a midland manufacturing town produced only 200 Grade I., 250 Grade II., 450 Grade III., 100 Grade IV. And that was characteristic of many towns in the Midland and Northern Counties of England and in the South of Scotland. Mr. Lloyd George's statement was found to be well within the mark. That was also true of the Premier's remark that the chief cause of the deterioration was in the home. Dr. A. Shadwell had traversed that statement on the subject in his *Times* letter, but Mr. Lloyd George evidently meant that no first-rate country had done less than England in providing certain conditions for improving the home. Professor Keith said he wanted to see a physical census of the people, and even after the setting up of a Ministry of National Health he would retain the Ministry of National Service, and he would have each county subdivided into areas, so that prevailing standards and ailments could be traced and investigated.

INFORMATION FOR INVALIDED CANADIAN SOLDIERS AND SAILORS.

A NEW version of a familiar poster has been prepared and will shortly make its appearance in Canada, entitled "What Every Invalided Canadian Soldier and Sailor Should Know." The information appearing on it is reproduced in pocket size on a khaki card, which is given to every wounded or otherwise invalided member of the force. The card consists of 26 paragraphs printed in red and black alternately, of which the following are examples:—

1. That his first business is to get well and stay well.
5. That until his discharge, being still a soldier, he is under the care of the Militia Department.
6. That the Department of Soldiers' Civil Re-establishment coöperates by arranging helpful and interesting occupations in the hospitals of the Militia Department.
13. That if he is willing to learn, and takes the opportunities offered him to increase his skill, he can usually get a better position than he had before.
15. That if his service disability prevents him from returning to his old work, after discharge, the Department of Soldiers' Civil Re-establishment gives him free training for a new occupation.
16. That his maintenance and that of his family are paid for as long as this training lasts, and for a month longer if necessary.
21. That a pension, being for disability caused or aggravated by service, cannot be reduced by his taking work or perfecting himself in an industry.
22. That if he needs an artificial limb or other orthopædic appliance it will be supplied free and kept in repair by the Department of Soldiers' Civil Re-establishment.
26. That if he wishes further information, advice, or help from the Department of Soldiers' Civil Re-establishment he should write to its headquarters, 22, Victoria-street, Ottawa, or speak to a representative of the Department. Every man is interviewed by such a representative before discharge.

The number of men accepted for training has now risen to nearly 3000. The motto of the organisation would appear to be Paragraph 12: "Skill won makes up for strength lost."

THE King has given permission to Dr. Lilian Violet Cooper to wear the Insignia of the Fourth Class of the Order of St. Sava, conferred upon her by the King of Serbia in recognition of services as surgeon at the Scottish Women's Hospital at Ostrovo during the present war.